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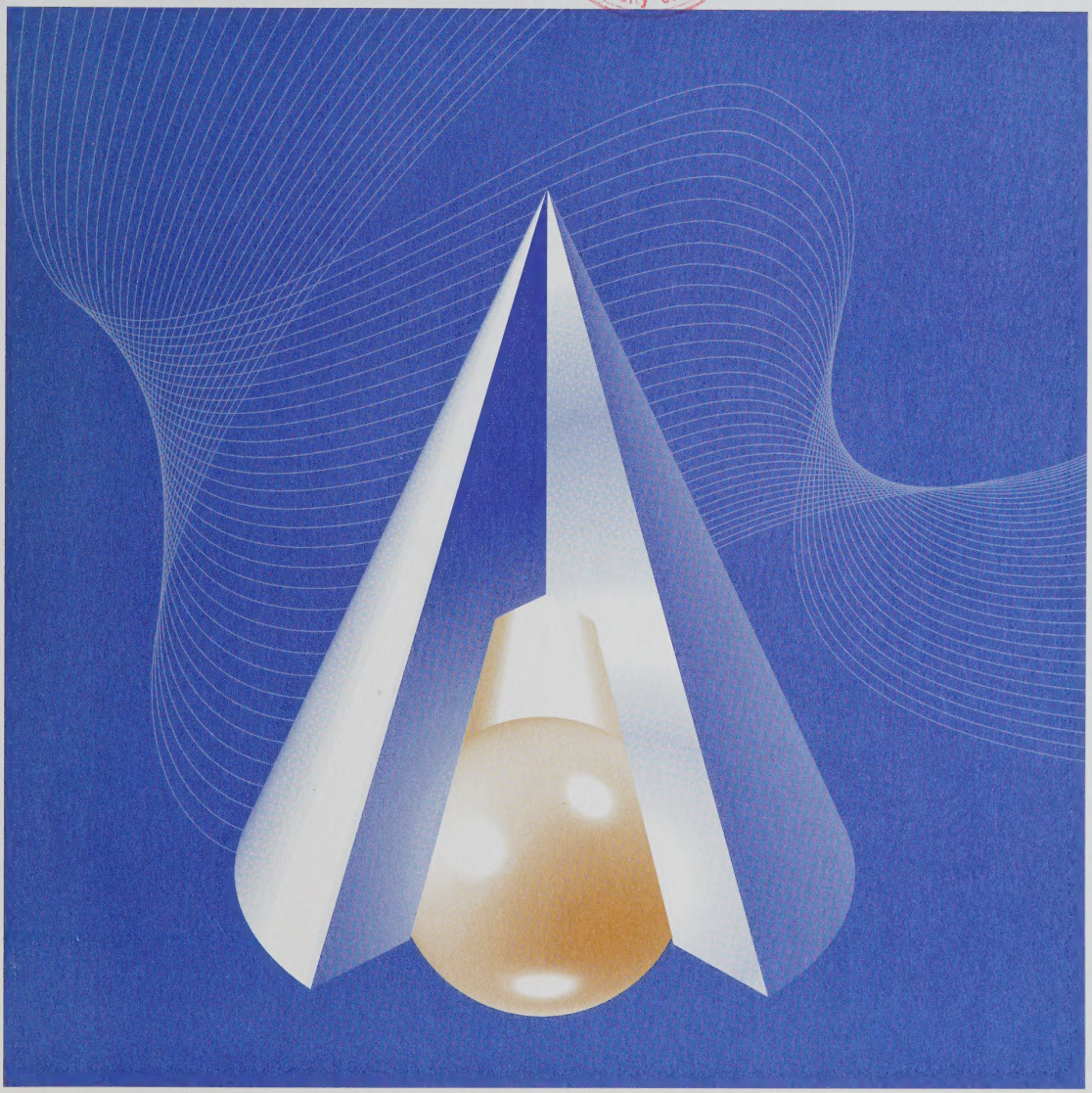
The Wealth Position of Immigrant Families in Canada

by Xuelin Zhang

No. 197



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Abstract

The economic assimilation of immigrants is a key concern for economists and policy makers. The topic has been widely explored in terms of earnings assimilation of immigrants. Using the 1999 Survey of Financial Security, this study attempts to look at the issue from the wealth perspective.

The study found that among married families, immigrants have higher wealth than their Canadian-born counterparts from the 40th to 90th percentiles of the distribution, with the wealth gap ranging between $20,000 and $78,000. Among single families, immigrants have higher wealth from the 55th to 95th percentiles, with the wealth gap ranging between $14,000 and $145,000. At the bottom of the distribution, however, evidence suggests that immigrants have lower wealth, although the gap is generally below $10,000. Various decomposition results indicate that the age of the major income recipient (and of the spouse for married families) as well as factors affecting permanent income explain a significant portion of the wealth gap in cases where immigrant families have higher wealth than the Canadian-born. At the bottom of the wealth distribution, however, the wealth gap cannot be explained by the age of the major income recipient, permanent income factors, or family size (or lone-parent status), suggesting that low-wealth immigrant families may behave differently than low-wealth Canadian-born families in their wealth accumulation process.

The wealth gap is also studied from a cohort perspective. Not surprisingly, recent immigrants have lower wealth than comparable Canadian-born families, and immigrants who arrived before 1976 have higher wealth. While immigrants who arrived in Canada between 1976 and 1985 are widely believed to initially have had more of an earnings disadvantage than their predecessors with respect to the Canadian-born, this study finds that, over the upper segment of the distribution, the wealth of this cohort is not significantly different from that of comparable Canadian-born families. This cohort has lower wealth only over the lower portion of the distribution.

Keywords: immigrant, wealth gap, counterfactual decomposition, life-cycle hypothesis, cohort effect

I. Introduction

The economic assimilation of immigrants is a key concern for economists and policy makers. While economists focus almost exclusively on the earnings assimilation of immigrants, little is known about the wealth of immigrants in Canada and elsewhere.[1] Using Statistics Canada's 1999 Survey of Financial Security, this article takes a first step in addressing some key issues pertaining to the wealth position of immigrants in Canada. Specifically, the study estimates the wealth gap between immigrant and Canadian-born families and identifies factors that may explain this gap. The cohort effect is also explored.

The importance of this topic can be seen first by looking at the earnings assimilation of immigrants. In this regard, leading economists have painted a rather pessimistic picture. Using data from the 1971, 1981 and 1986 Canadian censuses, Baker and Benjamin (1994) failed to reject the zero assimilation hypothesis for male immigrants aged between 16 to 64, while Bloom, Grenier and Gunderson (1995) found strong negative entry effect and negligible rate of assimilation for male immigrants and zero assimilation for female immigrants.[2] If immigrants are able to close the wealth gap with those born in Canada, factors other than earnings, such as savings rate, inheritance, and return on investments, will play a significant role in their accumulation of wealth, and the zero earnings assimilation rate of immigrants need not be as disturbing as it has been perceived.

Second, not only is the wealth position of immigrants an important aspect of economic assimilation, it also plays a key role in the whole process of economic assimilation. A family's wealth affects access to the credit market, and allows family members to venture into business activities, pursue higher education, or spend more time looking for a better job. An established wealth position may help immigrants overcome disadvantages they may face socially and in the labour market. For example, until fully assimilated into the host economy, immigrants may face more earnings uncertainty than those born in Canada. Wealthy immigrants will be in a better position than low-wealth immigrants in dealing with the uninsurable portion of this risk and will achieve a higher rate of earnings assimilation.

Finally, according to the well-known life-cycle hypothesis, individuals accumulate wealth during their working age and consume this wealth upon retirement. Those who retire with a large amount of wealth will be less likely to rely on government transfers for their retirement consumption. If immigrants are unable to save enough for retirement, high immigrant intake will have negative effects for public retirement funds.

This study confirms the existence of wealth gaps between immigrant and Canadian-born families from the middle to the top portions of the wealth distribution. Within this segment, the wealth of immigrant families is significantly higher than that of Canadian-born families. Decompositions of the wealth gap indicate that the age of the major income recipient (MIR) and factors related to

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[1] The only exception is perhaps Shamsuddin and DeVoretz (1998), in which the authors study wealth accumulation of Canadian and foreign-born households from 1977 to 1984.

[2] Borjas (1995) reaches similar conclusions with the 1970, 1980, and 1990 U.S. censuses. However, in a study using the 1981, 1986 and 1991 Canadian censuses, Grant (1999) finds evidence that male immigrants who arrived in Canada between 1980 and 1990 experienced significant earnings growth during their first five years after arrival.

family permanent income can explain a significant portion of the wealth gap. At the bottom of the distribution, however, the wealth gap cannot be explained by the model, suggesting that lower-wealth families may behave differently from families of other wealth classes.

The wealth gap is also explored for different cohorts of immigrants. Not surprisingly, recent immigrants have lower wealth than comparable Canadian-born families, while immigrants who arrived in Canada before 1976 have higher wealth. The results for low-wealth immigrants who arrived between 1976 and 1985 is consistent with the widely held notion that they were in a more disadvantageous earnings position than their predecessors. However, evidence suggests that high-wealth immigrant families of this cohort have the same or even higher wealth than their Canadian-born counterparts.

The next section describes the data source and presents a summary of wealth across a few explanatory variables. Section 3 examines the existence and the magnitude of the wealth gap between immigrants and Canadian-born families. Section 4 attempts to identify factors that may explain the wealth gap, while Section 5 explores the cohort effect on the wealth gap. Section 6 contains a summary and the conclusion.

2. Data

The data source employed in this study is Statistics Canada's Survey of Financial Security. The survey, conducted from May to July 1999, is based on Statistics Canada's Labour Force Survey sampling frame and represents all families and individuals in Canada except residents of the Yukon and the Northwest Territories, households located on Indian reserves, full-time members of the Armed Forces, and inmates of institutions. Information was collected for 15,933 family units and included data on all family members aged 15 or over. In this study, observations were deleted for major income recipients who reported being married or living with a common-law partner but who did not provide information on the spouse. As a result, the actual sample consisted of 15,801 family units.[3]

There is no unique definition for an immigrant family. In this article, a family is referred to as an immigrant family if its major income recipient is an immigrant. If the major income recipient is not an immigrant, the family is referred to as a Canadian-born family. Since the study employs only cross-sectional data, no ambiguity can be introduced by this definition.[4]

Wealth or net worth is defined as the difference between total assets and total debts. Total assets include all deposits; investments in mutual funds, bonds, and stock holdings; registered retirement savings plans (RRSPs) or funds in locked-in retirement accounts (LIRAs); principal residence and other real estate assets; vehicles; contents of principal residence; collectibles and valuables; business equity; and other assets such as registered education savings plans (RESPs),

[3] In the survey, an unattached individual is also viewed as a family unit. Detailed information on the survey is provided in the Statistics Canada publication *the Assets and Debts of Canadians: An overview of the results of the Survey of Financial Security, 1999* (Catalogue number 13-595-XIE).

[4] With longitudinal data, however, this definition does not work. For example, if the spouse of an immigrant major income recipient is not an immigrant, and if the spouse becomes the family's major income recipient of the family the following year, the immigrant family will become a Canadian-born family.

deferred profit-sharing plans, homeownership savings plans, and annuities. Total debts include mortgage debts on principal residence and other real estate; outstanding balances on credit cards, deferred payment and installment plans; student loans; vehicle loans; lines of credit; and other money owed. The value of work-related pension plans, entitlements to social security programs to be provided by governments such as the Canada and Quebec Pension Plans (CPP/QPP) and Old Age Security (OAS) are excluded from total assets.[5]

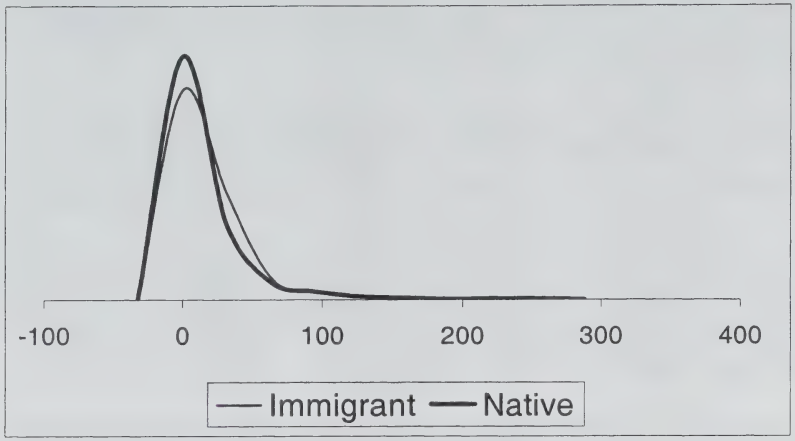
Since the death of a partner or a marital breakup may have a significant effect on family wealth (Burbidge and Robb, 1985), separate analyses for single and married families seem reasonable. A family in which the married major income recipient is married or lives with a common-law partner is defined as a married family. Among the 15,801 family units in the sample, 9,595 are married families. The remaining 6,206 consist of unattached individuals and lone-parent families. These are referred to as single families. Hence, there are four types of families according to marital status and immigration status: married immigrant families and Canadian-born families, single immigrant families and Canadian-born families. The corresponding number of observations are 1,746, 7,849, 910, and 5,296 respectively.

The non-parametric estimates of the wealth kernels (Figure 1) suggest that wealth distributions are highly skewed to the right, and data outliers are likely to be non-trivial. Indeed, Table 1 shows that the overall mean wealth of married families is roughly twice their overall median wealth, while the overall mean wealth of single families is approximately four times their overall median wealth. Likewise, the mean and median wealth of married immigrant families is 6.7% and 25.9% higher than the mean and median wealth of Canadian-born families, while the corresponding differences between single immigrant and Canadian-born families are 33.1% and 12.0% respectively. Hence the magnitude of the wealth gap between immigrant and Canadian-born families will be different depending on which measure one adopts. Instead of focusing on a single point such as the mean or the median of the wealth distribution, this study examines the wealth gap at all major points of the distribution.

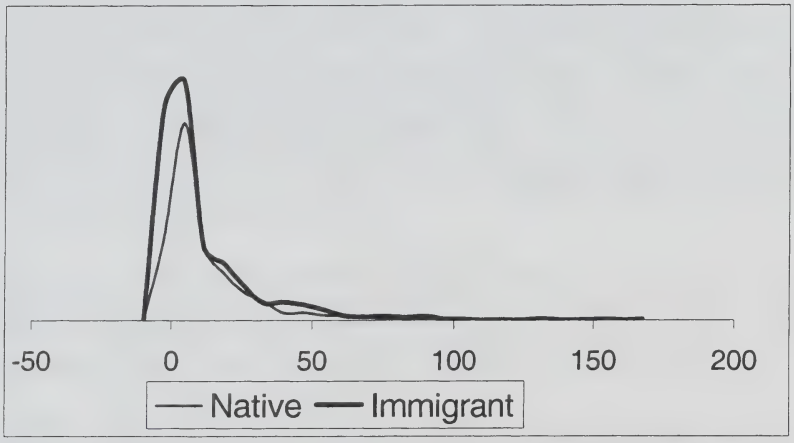
[5] Entitlements to work-related pension plans and social security incomes are excluded from family assets since they cannot be cashed to repay family debts. Nevertheless, these future entitlements may have a negative effect on family savings. Table A2 provides the mean and median pension and social securities incomes (CPP/QPP, private pension, OAS, and Guaranteed Income supplement) at the family level. The figures suggest that immigrant and Canadian-born families (with an MIR aged 55 or over) received similar amount of these incomes in 1998. If the estimates hold for future generations, pension and social security income entitlement should not affect family savings in any significant way.

Figure 1. Non-parametric estimates of wealth distributions

(1) Married families



(2) Single families



A number of factors may be used to explain the wealth gap between immigrant and Canadian-born families. Among these factors, savings rate, return on investments, and bequests are not directly available from the Survey of Financial Security. This analysis must therefore rely on available information. One theory widely employed in studying wealth accumulation is the life-cycle model. It is natural to expand this theory to family wealth accumulation by postulating that a family also has its own life cycle. At an early stage, a family may have few assets but considerable amounts of debt, while at a later stage, it may have a substantial assets and no debts. The age of the family's major income recipient (and of the spouse for married families) will be used in this study to capture the effect of family life cycle on wealth accumulation. Table 1 shows that the wealth of married families reaches its maximum when the major income recipient is aged 56 to 65, and falls thereafter. With single families, the changes are more complex. The

mean wealth of single immigrant families increases to a maximum and then decreases, but the median wealth of single immigrant families, as well as the mean and median wealth of single Canadian-born families, reach their maximum when the major income recipient has turned 65.[6]

Family income is another factor that affects wealth accumulation, and hence it helps explain the wealth gap between immigrant and Canadian-born families. Table 1 provides the mean and median wealth across different quintiles of family after-tax income. It can be seen that family wealth generally rises as after-tax income increases. But family after-tax income is a measure of current income, which is subject to random shocks such as unemployment and fluctuations in return on investments—factors beyond the control of individual families. Theoretically, a family's consumption and savings decisions are based on permanent income.[7] To construct a permanent income measure, one would ideally have observations of family income over a number of years (Altonji and Doraszelski, 2001). However, given that the data set in this study is cross-sectional, age, education, and gender are used as factors affecting permanent income in explaining the wealth gap.[8]

[6] A finer classification of five-year age intervals leads to the same observation.

[7] Current income is also likely endogenous as a portion of family income is generated from current assets.

[8] Blau and Graham (1990) construct their permanent income measure on cross-section income regression results. This approach uses the predicted income of the family head at a fixed age as a measure of family permanent income. Given that the study uses only cross-sectional data, it seems plausible to follow this approach. But a particular difficulty arises in calculating permanent income for immigrant families. Since the "year since migration" (YSM) variable plays a key role in immigrants' earnings assimilation, it has to be included in the regression. However, if the fixed age chosen for calculating permanent income is low enough, some older immigrants who arrived in Canada more recently would not yet have immigrated.

Table 1. Mean and median wealth ($) vs. family characteristics

	Immigrant			Canadian-born		
	Median	Mean	Std. err.	Median	Mean	Std. err.
Married: overall	159,600	280,154	16,839	126,750	262,631	8,059
MIR's age						
<=25	10,275	25,007	6,865	14,700	60,452	13,277
26-35	52,000	102,267	14,317	57,701	103,087	7,061
36-45	87,800	184,464	33,544	120,120	243,558	18,150
46-55	222,904	345,595	23,605	180,200	349,893	19,915
56-65	322,000	449,547	44,485	215,500	403,179	26,726
>65	237,502	364,555	63,079	202,069	330,239	17,121
Single: overall	30,451	140,908	10,717	27,200	105,871	3,384
MIR's age						
<=25	1,020	104,601	53,738	1,550	24,797	5,139
26-35	7,100	90,940	23,711	14,750	72,876	10,658
36-45	16,100	73,159	10,714	36,500	87,218	4,831
46-55	62,200	164,803	24,362	49,003	142,287	14,193
56-65	82,466	235,067	51,501	55,400	163,670	13,173
>65	101,540	184,247	18,078	90,353	170,944	7,567
Married: after-tax income						
q1 - q20	61,070	159,298	33,886	63,400	137,823	9,472
q21 - q40	149,105	214,333	14,381	85,272	161,690	6,500
q41 - q60	133,000	204,248	16,480	110,004	207,106	14,125
q61 - q80	158,000	279,129	25,555	146,455	266,393	15,539
q81 - q100	326,498	511,202	55,169	284,605	551,834	31,062
Single: after-tax income						
q1 - q20	1,020	31,041	10,784	1,497	31,721	6,008
q21 - q40	10,100	76,866	11,710	11,000	64,759	5,699
q41 - q60	18,100	93,006	11,192	26,000	78,762	4,152
q61 - q80	62,200	148,185	20,002	51,900	108,263	5,328
q81 - q100	167,201	310,923	36,233	121,200	253,078	15,663
Married: Family size						
2	200,000	343,935	36,510	151,000	281,512	10,810
3	125,000	257,823	43,967	104,100	238,378	17,568
4	148,260	252,714	18,473	118,000	245,071	19,897
>=5	124,300	236,142	25,904	123,521	274,230	22,625
Single: lone-parent status						
lone parent	15,100	71,415	15,815	13,550	68,744	9,682
other single family	34,108	152,613	12,267	29,600	110,502	4,167

Aside from age and factors related to permanent income, the study also looked at difference in family size among married families and lone-parent status among single families. From the intergenerational wealth transfer perspective (Blinder, 1973), it would be more coherent to look at differences in number of children between immigrant and non-immigrant families. For transfer purposes, children of all ages must be taken into consideration when measuring the number of children. But the 1999 Survey of Financial Security only provides an accurate number of children aged below 25. Adult children aged 25 or older are considered relatives of the major income

recipient, even though these children are still living in the family and are future bequest recipients. Hence family size is used as an alternative for the number of children in married families.[9] Table 1 shows that the effect of family size on wealth is complex. Families of two persons, presumably couples without children, have higher wealth than larger families. Among families with more than two persons, family size decreases the mean wealth of immigrants, but increases the mean and median wealth of Canadian-born families.

Lone-parent status could have important negative effects on wealth accumulation among single families. In order to work, lone parents with small children often have no choice but to purchase child-care services. This lowers savings and can create a situation where their wealth is lower than single families with no small children. Indeed, the sample shows that the mean and median wealth of lone-parent families are approximately half those of other families.

Appendix Table 1 contains a descriptive summary of the above characteristics. It shows that, those of average, major income recipients of married immigrant families are three years older than in married Canadian-born families, and those of single immigrant families are five years older than those of single Canadian-born families. While the average after-tax income of single immigrant families is 12% higher than that of single Canadian-born families, the difference between married immigrant and Canadian-born families is only 1.4%. The average family size of married immigrant families is 11.5% higher than that of married Canadian-born families, and single immigrants are 30% more likely than single Canadians to live in a lone-parent family. In terms of factors related to permanent income, immigrant families are more likely than Canadian-born families to have a female major income recipient, although the difference is not large, and immigrant major income recipients (and spouses) have higher education than the Canadian-born. Remarkably, immigrants are almost twice as likely as the Canadian-born to have above-university education.

3. How wide is the wealth gap?

As previously mentioned, the wealth distribution is highly skewed to the right and outliers in wealth data are likely to be non-trivial. The non-parametric estimates of the wealth distributions (Figure 1) show that a small number of families have extremely high wealth. In such a situation, analysts usually smooth the data by taking the natural logarithm transformation. However, at the left side of the distribution, there are a non-negligible number of families with zero or negative wealth. Some economists choose to exclude these families, while others conduct complex transformations.[10] Even if the outliers and non-normality issues are resolved, it is unclear if immigrants really have higher wealth than Canadian-born families (and if so, by how much) when a single measure of the wealth gap such as the mean or the median is adopted. Hence, it seems more appropriate to estimate the wealth gap along the whole distribution rather than at one or two points.

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[9] It should be stated that family size itself also cannot fully measure the number of potential bequest recipients—for example, in the case of married children living away from parents.

[10] For example, Shamsuddin and DeVoretz (1998) exclude all families with net worth less than $3,500, while Burbidge and Robb (1985) apply a modified Box-Cox transformation on all observations of wealth.

The wealth gap at each point of the distribution may be simply calculated as the difference in wealth between immigrants and Canadian-born families at different percentiles. For example, one can find the median wealth of immigrant families and the median wealth of Canadian-born families. The difference between the two is the wealth gap at the 50^{th} percentile of their wealth distributions. Similarly, one can find the wealth levels at the 75^{th} percentiles, and the difference is their wealth gap at the 75^{th} percentile of the wealth distribution. This calculation is simple but it does not provide the standard errors to the estimated wealth gaps,[11] and tests such as the significance of the wealth gap at a point of the distribution, as well as tests on whether the wealth gaps at different points of the distributions are the same, cannot be conducted.

An alternative method is the generalized quantile regression. The above tests are then feasible and identical estimates of the wealth gap are produced. The method was introduced by Koenker and Bassett (1978); and more recently applied by Buchinsky (1998); Mueller (1998); and Garcia, Hernandez, and Lopez-Nicolas (2001); among others. The advantages of the generalized quantile regression method are: (1) it can generate a wealth gap at any point of the distribution, not just a single measure such as the mean wealth gap; (2) the method is semi-parametric so that no distribution assumptions on the dependent variable are needed; (3) the estimator is less sensitive to outliers than the OLS estimator; and (4) tests of significance of the gap and tests on whether the gaps are the same at different points of the distribution can easily be conducted.[12] The second and the third advantages of the method imply that it is not necessary to exclude any families from the analysis, and no complex transformation is needed to deal with data outliers or non-normality issues.

The method can be easily understood from its special case—the least absolute deviation (LAD) regression. While the OLS regression fits the dependent variable as a linear function of some explanatory variables through the mean, the LAD fits the dependent variable as a linear function of explanatory variables through the median of the dependent variable. Extending the notion of the LAD, the generalized q^{th} quantile regression fits the dependent variable as a linear function of some explanatory variables through the q^{th} quantile of the dependent variable. As shown by Buchinsky (1998), the generalized quantile estimators are consistent and asymptotically normally distributed, and hence tests of significance of an estimator and tests on the difference between estimators can be conducted.

In order to estimate the wealth gap between immigrant and Canadian-born families at the q^{th} quantile of the wealth distribution, it is only necessary to specify that the q^{th} quantile conditional expectation of wealth as a linear function of a constant and a dummy variable for immigration status.

$$w_i = \alpha^q + \beta^q IMG_i + \varepsilon_i^q \qquad (1)$$

where w_i is wealth level, IMG_i is a dummy variable which equals 1 if family i is an immigrant family, and 0 if the family is Canadian-born. The only assumption one needs to make is the restriction that $Q^q(w_i | IMG_i)$—the q^{th} quantile of the wealth density conditional on IMG_i —is equal to $\alpha^q + \beta^q IMG_i$, or equivalently, $Q^q(\varepsilon^q \mid IMG_i) = 0$. The estimate for β^q represents the

[11] But bootstrap standard errors may be calculated.

[12] The tests are asymptotic, however.

wealth gap between immigrant and Canadian-born families at the q^{th} quantile of their wealth distributions.[13] Moreover, the above equation can be estimated simultaneously at different values of q to obtain the variance-covariance matrix for the βs at those different quantiles. Since these estimators are asymptotically normal, the equality of the wealth gaps at different points of the distributions can be tested.

Table 2. Observed wealth gap between immigrant and Canadian-born families ($10,000)

	All families			Married families			Single families	
location	Gap	t-stat.		Gap	t-stat.		Gap	t-stat.
Mean	3.80	3.30		1.75	1.00		3.50	3.55
5th	-0.06	-0.54		-0.10	-1.03		-0.14	-0.65
10th	0.00	0.00		-0.52	-3.12		-0.10	-1.54
15th	-0.02	-0.24		-0.82	-3.46		0.00	-0.05
20th	-0.04	-0.26		-0.62	-1.54		-0.01	-0.32
25th	-0.02	-0.11		-0.07	-0.20		-0.06	-0.58
30th	0.33	1.30		0.30	0.81		-0.16	-1.79
35th	0.99	2.89		0.89	1.86		-0.18	-0.85
40th	1.63	5.22		1.98	3.72		-0.20	-0.85
45th	2.13	5.11		2.89	4.56		-0.30	-0.87
50th	3.44	7.27		3.29	4.79		0.33	0.70
55th	4.82	8.76		3.69	5.17		1.41	2.32
60th	5.06	8.67		4.77	6.16		1.49	2.33
65th	5.62	7.45		6.12	6.35		2.69	3.45
70th	7.08	8.93		6.58	5.68		5.25	4.94
75th	8.35	8.47		7.05	4.72		5.30	4.71
80th	9.89	8.85		6.68	3.43		6.51	5.59
85th	11.40	7.47		6.99	3.40		7.40	4.55
90th	10.99	4.96		7.79	2.29		13.94	5.63
95th	11.59	2.85		1.01	0.16		14.50	2.55
Number of observations	15,801			9,595			6,206	

Table 2 presents the estimated wealth gaps between immigrant and Canadian-born families at different locations of the wealth distribution. When all families are pooled together, immigrant families have higher wealth than Canadian-born families, at the mean and over a large portion of the wealth distribution. The average wealth gap is estimated to be $38,000, and ranges between $10,000 at the 35th percentile to $116,000 at the 95th percentile. Outside the 35th to 95th percentile range, virtually no wealth gap can be found. Although the mean wealth gap of $17,500 is not significantly different from zero between married immigrant and Canadian-born families, one cannot ignore the gaps along the wealth distribution. From the 10th to 20th percentiles, there is evidence suggesting that immigrant families have lower wealth than Canadian-born families. The wealth gap ranges between -$5,000 at the 10th percentile to -$8,000 at the 15th percentile. These differences are solid, although not huge. More remarkably, married immigrant families have higher wealth than their Canadian-born counterparts from the 35th to 90th percentiles of the

[13] When the equation is estimated by OLS regression, the estimated β measures the mean wealth gap.

distribution. The wealth gap ranges between $20,000 at the 40th percentile to $78,000 at the 90th percentile, and it generally widens along the distribution up to the 90th percentile. A few tests based on results of simultaneous quantile regression[14] leads to a decisive rejection of the hypothesis that the wealth gaps are the same along the distribution. For example, for the null hypothesis that the wealth gaps at the 50th, 75th and 90th percentiles are equal, an F-statistic of 4.80 with a p-value of 0.008 is obtained; and for testing the equality of the wealth gaps at the 40th, 60th, and 80th percentiles, the F-statistic is 12.65 and the p-value is close to 0.

The average wealth gap between single immigrant and Canadian-born families is estimated at $35,000 and is significantly different from 0. Along the distribution, single immigrant families are found to have higher wealth than their Canadian-born counterparts from the 55th to 95th percentiles. The wealth gap ranges between $14,000 at the 55th percentile to $145,000 at the 95th percentile. On the other hand, there is no strong evidence that low-wealth single immigrant families have lower wealth than their Canadian-born counterparts. The only points where single immigrant families may have lower wealth are located around the 10th and 30th percentiles, where the wealth gaps are negligible (-$1,000 and -$1,600). As with married immigrant and Canadian-born families, strong evidence exists to reject the equal wealth gap hypothesis along the distribution. For example, the F-statistic for testing the equality of wealth gaps at the 55th, 75th and 95th percentiles is 10.36, and the p-value is practically 0. The equality of wealth gaps at the 65th, 75th, and 85th percentiles is also decisively rejected.

In summary, the above results indicate the existence of wealth gaps between immigrant and Canadian-born families along the distribution. At the lower tail of the distribution, there is evidence that low-wealth immigrant families have lower wealth than their Canadian-born counterparts. But over a large portion of the distribution—from the 40th to 90th percentiles for married families, and from the 55th to 95th percentiles for single families—there is strong evidence that immigrant families have higher wealth than their Canadian-born counterparts, and that the wealth gaps are not equal at different points of the distribution. The gaps are small among the lower-middle wealth class for married families and among the middle class for single families, but they become considerably larger among the upper and upper-middle classes.

4. Explaining the wealth gap

The previous section demonstrates the existence and magnitude of the wealth gap between immigrant and Canadian-born families. An attempt will now be made to explain the wealth gap with a few key variables that may have important effects on wealth accumulation. The wealth gap is explained first under the restriction that immigrant and Canadian-born families have identical wealth distribution. This restriction is then relaxed and a semi-parametric analysis is carried out.

4.1 Results from restricted model

As discussed in Section 2, aside from savings, return on investments, and inheritance, characteristics such as age of the major income recipient (and spouse), family size, and lone-

[14] Stata's SQREG procedure is employed to run the simultaneous quantile regression with 500 bootstrap replications to obtain an estimate of the variance-covariance matrix of the estimators.

parent status (for single families) as well as factors affecting family permanent income play important roles in wealth accumulation. As a first step, these available variables have been included in Equation (1), with a restriction that their effects on wealth are the same for immigrant and Canadian-born families. The coefficients on immigrant status in this extended model indicate the extent to which the wealth gap between immigrant and Canadian-born families remains unexplained when a number of observable differences are controlled. These coefficients are also referred to as "conditional wealth gap" between immigrant and Canadian-born families. The ratios of these coefficients to the observed wealth gap indicate the portion of the observed wealth gap that remains unexplained after controlling for characteristic differences. Three specifications are estimated. In Model 1, only age dummies of the major income recipient (and spouse for married families) are included as additional explanatory variables. In Model 2, family size (lone-parent status for single families) is added; and in Model 3, the major income recipient's (and spouse for married families) gender and education level, and the interaction between the two are included. The main results are presented in Table 3.

As expected, the coefficients on immigrant status become smaller when additional controls are introduced. First examined is the segment of the distribution over which immigrant families have higher wealth than their Canadian-born counterparts (from the 35^{th} to 90^{th} percentiles for married families, and from the 55^{th} to 95^{th} percentiles for single families). Model 1 shows that the observed wealth gaps are dramatically reduced when the age of the major income recipient and spouse are controlled. Indeed, most of the coefficients on immigrant status now become insignificant or only marginally significant among married families. For example, the coefficient at the median becomes $6,300 with a t-statistic of 1.71, and at the 90^{th} percentile, the coefficient changes to $13,000 (t = 0.64) from $78,000. While reductions of the coefficients for single families are not as dramatic, it is also apparent that the major income recipient's age plays a very important role in explaining the wealth gap between single immigrant and Canadian-born families. Overall, Model 1 shows that the age of the major income recipient and spouse can explain a minimum of 70% of the wealth gap (at the 60^{th} percentile) between married immigrant and Canadian-born families, while the major income recipient's age alone can explain at least 27% of the wealth gap (at the 95^{th} percentile) between single immigrant and Canadian-born families.

For single families, when lone-parent status and the major income recipient's age are controlled (Model 2), the coefficients on immigrant status are slightly reduced from those of Model 1. With Model 2, at least 32% of the wealth gap (at the 95^{th} percentile) among single families can be explained. For married families, all of the estimated coefficients at points over the 35^{th} to 90^{th} percentile range of the distribution become insignificant or only marginally significant, and at least 76% of the wealth gap (at the 60^{th} percentile) is explained by the age of the major income recipient, age of spouse, and family size. The results of Model 3 show that between 52% and 128% of the observed wealth gap among single families can be explained by age of the major income recipient, lone-parent status, and permanent income factors; and at least 76% of the wealth gap between married immigrant and Canadian-born families can be explained by age of the major income recipient and spouse, family size, and factors related to permanent income. Interestingly, in terms of explaining the observed wealth gap, Model 3 does not perform any better than Model 2 for married families, but it performs much better for single families.

For low-wealth families, the coefficient on immigrant status also becomes smaller when additional controls are introduced. For example, at the 10^{th} percentile, the observed wealth gap of -$5,200 between married families becomes -$7,400, -$7,200 and -$14,700, while the observed gap of -$1,000 between single families becomes -$1,300, -$1,400 and -$1,900 under Models 1, 2, and 3 respectively. But since the observed wealth gaps between immigrant and Canadian-born families are negative—immigrant families have lower wealth than their Canadian-born counterparts—the now smaller coefficients imply that the wealth gaps are widened when additional controls are introduced. This result indicates that low-wealth immigrant families may behave differently from other wealth classes of immigrants in their wealth accumulation process.

The complete set of coefficient estimates of the three models is contained in Table A3. Except at the very bottom of the distribution, the results show that the effect of the major income recipient's age constantly increases along the wealth distribution, while the effect of spousal age constantly increases to the upper-middle of the wealth distribution, and then starts to decrease. As well, the effect of the major income recipient's education level increases at each point of the distribution. Although the effect of spousal education is not significant at the lower portion of the wealth distribution, it starts to increase from the middle of the wealth distribution. The effect of family size on the wealth of married families also increases along the distribution, but the effect of gender is by and large constant, while lone-parent status is generally not very important in the wealth accumulation process of single families.

Table 3. Effect of key variables on wealth gap ($10,000)

I. Married family

		Model 1		Model 2		Model 3	
Location	Raw gap	Est. gap	t-stat	Est. gap	t-stat	Est. gap	std. err.
5th	-0.10	**-0.38**	-2.56	**-0.44**	-2.97	**-1.01**	-5.48
10th	-0.52**	**-0.74**	-3.48	**-0.72**	-3.39	**-1.47**	-6.49
15th	-0.82**	**-0.82**	-3.71	**-0.89**	-4.17	**-1.57**	-9.12
20th	-0.65*	**-0.80**	-2.63	**-0.83**	-2.69	**-1.35**	-5.14
25th	-0.07	-0.29	-0.95	-0.37	-1.27	**-1.05**	-4.74
30th	0.30	-0.03	-0.10	-0.10	-0.34	**-0.70**	-2.13
35th	0.89**	0.02	0.06	-0.02	-0.06	-0.58	-1.48
40th	1.98**	0.21	0.47	0.02	0.05	-0.16	-0.43
45th	2.89**	**0.59**	1.72	0.41	0.93	0.50	0.13
50th	3.29**	**0.63**	1.71	0.37	0.84	0.24	0.45
55th	3.69**	**0.90**	1.78	**0.83**	1.61	**0.85**	2.00
60th	4.77**	**1.42**	2.32	**1.12**	1.86	**0.99**	2.11
65th	6.12**	**1.42**	2.09	**0.96**	1.50	**1.08**	1.94
70th	6.58**	**1.66**	1.91	**1.41**	1.57	**1.57**	2.42
75th	7.05**	**1.28**	1.60	0.49	0.56	**1.35**	1.73
80th	6.68**	0.86	0.73	0.33	0.29	1.09	1.20
85th	6.99**	-0.33	-0.22	-0.91	-0.60	0.67	0.51
90th	7.79**	1.30	0.64	0.66	0.31	-0.37	-0.22
95th	1.01	-3.92	-0.78	-5.17	-1.25	-3.00	-0.86
OLS	1.75	-0.75	-0.43	-1.25	-0.71	-3.03	-1.71
II. Single	**family**						
5th	-0.14	-0.05	-0.80	-0.05	-0.80	-0.08	-0.80
10th	-0.10**	**-0.13**	-3.97	**-0.14**	-4.33	**-0.19**	-4.51
15th	0.00	**-0.17**	-4.60	**-0.16**	-4.26	**-0.34**	-8.26
20th	-0.01	**-0.17**	-2.76	**-0.17**	-2.73	**-0.39**	-5.35
25th	-0.06	**-0.25**	-2.61	**-0.26**	-2.79	**-0.43**	-5.28
30th	-0.16**	**-0.36**	-5.21	**-0.39**	-4.97	**-0.57**	-7.47
35th	-0.18	**-0.49**	-7.06	**-0.48**	-6.77	**-0.59**	-5.18
40th	-0.20	**-0.44**	-4.46	**-0.37**	-3.67	**-0.60**	-4.64
45th	-0.30	**-0.31**	-3.88	**-0.35**	-2.58	**-0.60**	-4.06
50th	0.33	-0.25	-1.61	-0.21	-1.00	**-0.51**	-3.30
55th	1.41**	-0.25	-1.00	-0.32	-1.23	**-0.39**	-2.39
60th	1.49**	-0.30	-1.12	-0.19	-0.73	-0.15	-0.63
65th	2.69**	0.34	1.31	0.41	1.31	**0.52**	2.09
70th	5.25**	**1.02**	2.56	**0.79**	1.77	**1.67**	6.34
75th	5.30**	**1.21**	2.89	**1.35**	3.37	**2.55**	9.47
80th	6.51**	**3.25**	4.84	**3.27**	4.49	**2.94**	5.65
85th	7.40**	**4.92**	4.27	**4.74**	5.12	**2.87**	3.55
90th	13.94**	**5.67**	2.72	**5.16**	3.15	**5.02**	6.61
95th	14.50**	**10.54**	2.53	**9.85**	2.55	**6.09**	2.45
OLS	3.50**	**2.05**	2.09	**2.14**	2.19	1.24	1.29

*. Significant at 10%. **. Significant at 5%.

In summary, among middle and high-wealth families, where married immigrant families have higher wealth than their Canadian-born counterparts, more than 70% of the observed wealth gap can be explained by family life cycle, family size, and factors related to permanent income. Between the 55th and 95th percentiles of the distribution, where single immigrant families have higher wealth than their Canadian-born counterparts, at least 52% of the gap is explained by age of the major income recipient, lone-parent status, and factors related to permanent income (at the 75th percentile in Model 3). At the bottom of the wealth distribution, the conditional gap between low-wealth immigrant families and their Canadian-born counterparts diverges from the observed gap when a number of family characteristics are controlled, so the observed gap cannot be explained over this portion of the distribution by the above factors.

4.2 A Semi-parametric decomposition

The above result is subjected to the restriction that the effects of some key variables on wealth accumulation are identical for immigrant and Canadian-born families. To see the consequence, we now relax this restriction. The most widely followed approach is the Oaxaca decomposition. It attributes the mean difference of the dependent variables between two groups to an explained component that is due to differences in observed characteristics and an unexplained component that is due to differences in unobserved characteristics. A difficulty with this approach is that a parametric specification has to be made for the conditional expectation of the dependent variable (in this case, wealth). As Barsky et al. (2001) have shown, the mis-specification of the regression function is likely to result in erratic inferences regarding the portion attributable to differences in the explanatory variables. To avoid this problem, the semi-parametric decomposition approach proposed by DiNardo, Fortin and Lemieux (DFL) (1996) was modified and applied in this study. This approach is much the same as the Oaxaca decomposition. The key question is what would be the wealth distribution of immigrant families if they were given the characteristics of Canadian-born families, or of Canadian-born families if given the characteristics of immigrant families. A slight modification of the DFL principle enables us to answer the above counterfactual question. Using conditional probability rule, the marginal density of wealth (w) of a family with character(s) x is,

$$f(w) = \int f(w|x)g(x)dx,$$

where f(·) and g(·) are density functions. The observed density of wealth for an immigrant family (IMG=1) can be written as

$$f(w|IMG=1) = \int f^{IMG}(w|x)g(x|IMG=1)dx.$$

The counterfactual density of wealth for an immigrant family if it were given the characteristics of a Canadian-born family (IMG=O) can be defined as

$$\begin{aligned} f_{CF}^{IMG}(w) &= \int f^{IMG}(w|x)g(x|IMG=0)dx \\ &= \int f^{IMG}(w|x)g(x|IMG=1)\psi(x)dx. \end{aligned}$$

where

$$\psi(x) = \frac{g(x \mid IMG = 0)}{g(x \mid IMG = 1)}.$$

is a "re-weighting" factor. Applying Bayes' rule for the unconditional density function $g(x)$, the following identity is obtained,

$$\frac{g(x \mid IMG = 0)P(IMG = 0)}{P(IMG = 0 \mid x)} = \frac{g(x \mid IMG = 1)P(IMG = 1)}{P(IMG = 1 \mid x)}.$$

This implies that the re-weighting factor $\psi(x)$—a ratio of two conditional densities—can be written as

$$\psi(x) = \frac{P(IMG = 1)}{P(IMG = 0)} \frac{P(IMG = 0 \mid x)}{P(IMG = 1 \mid x)} \qquad (2)$$

One can construct statistics such as the weighted mean, weighted variance, and weighted quantiles, as well as weighted density function (non-parametrically) of wealth for immigrant families, using estimated values of $\psi(x)$ as the weights.[15] They are referred to as counterfactual mean, counterfactual variance, counterfactual quantiles, and counterfactual density function respectively. The first part of the right hand side of Equation (2) can be approximated by the ratio of immigrant over Canadian-born families, while the second part is the ratio of two conditional probabilities, each can be calculated from a logit (or probit) regression on explanatory variable(s) x.

While the wealth gap decomposition can be based on the counterfactual mean or the counterfactual density, our decomposition was conducted using the counterfactual quantiles. The quantile-based decomposition results are directly comparable to those obtained in the previous two sections.[16] The wealth gaps between immigrant and Canadian-born families at different quantiles of the distribution may be decomposed into an explained portion and an unexplained portion as the following,

$$W_q^{IMG} - W_q^{CND} = \left[W_q^{IMG} - \omega_q^{IMG}\right] + \left[\omega_q^{IMG} - W_q^{CND}\right] \qquad (3)$$

where ω_q^{IMG} is the q^{th} counterfactual quantile of wealth for immigrant families estimated with the re-weighting factor, and W_q^{IMG} and W_q^{CND} are observed wealth quantities for immigrant and Canadian-born families.

Table 4 contains the decomposition results for three specifications of the logit model. Model 1 includes only major income recipient (and spousal) age dummies, Model 2 adds family size for married families and lone-parent status for single families, and Model 3 further adds education,

[15] Statistical surveys usually have their own survey weights. In estimating the counterfactual density of a variable, the survey weight and the "re-weighting" factor will be used together. The new weight is simply the product of these two weights normalized to sum to 1.

[16] Since the mean wealth gap between married immigrant and Canadian-born families is insignificant, a mean-based decomposition is not very interesting in the current case.

gender and their interaction. The decomposition is performed first by using the counterfactual wealth quantiles of immigrant families, i.e., the wealth quantiles of immigrant families if they were to have the characteristics of Canadian-born families. The explained percentage is calculated as the ratio of the explained portion (first item on the right-hand side of Equation (3)) of the wealth gap to the observed gap (the left-hand side of Equation (3)). The alternative decomposition is performed using the counterfactual wealth quantiles of Canadian-born families. For this alternative decomposition, the logit models regress Canadian-born status on the same explanatory variables as above.

The result shows that among married families, at the bottom of the distribution where immigrant families have lower wealth than Canadian-born families, none of the factors explored can explain the negative wealth gap. Indeed, results from all of the three models indicate that immigrant families would have lower wealth than observed if they were given the characteristics of their Canadian-born counterparts. Over the remaining segment of the wealth distribution (40^{th} to 90^{th} percentiles), where immigrant families have higher wealth than Canadian-born families, the age of the major income recipient (and spouse) plays a prominent role in explaining the wealth gap. When the age of the major income recipient alone is controlled (Model 1), a minimum of 42% of the wealth gap can be explained if the counterfactual wealth quantiles for immigrants are employed for the decomposition (Panel A), and a minimum of 31% if the counterfactual wealth quantiles for Canadian-born families are employed (Panel B). When family size is also controlled (Model 2), the first decomposition scheme (Panel A) shows that at least 52% of the wealth gap can be explained, while the alternative decomposition (Panel B) indicates that a minimum of 37% of the gap can be explained. When age of the major income recipient, family size, and factors affecting permanent income are all controlled (Model 3), at least 58% of the wealth gap can be explained in Panel A, and a minimum of 71% in Panel B.

For single families, the result is consistent with that of the restricted model where lone-parent status does not contribute much in explaining the wealth gap. The following discussion will therefore focus on Models 1 and 3. The wealth gaps along the upper-middle portion of the distribution are well explained under both decomposition schemes. Between the 55^{th} and 85^{th} percentiles, a minimum of 31% of the wealth gap is explained with Model 1, and at least 37% with Model 3. Over the top portion of the distribution (at the 90^{th} and 95^{th} percentiles, in particular) the decomposition scheme (Panel A) employing immigrant counterfactual wealth does not perform well.

Table 4. Semi-parametric decomposition (% of wealth gap explained)

		Panel A. Immigrant Counterfactual			Panel B. Canadian-born Counterfactual		
I. Married families							
Locations	Raw gap	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
10th	-0.52	-34.6	-40.4	-42.3	-77.7	-75.2	-81.6
15th	-0.82	-46.7	-52.9	-56.6	-81.5	-88.6	-104.0
40th	1.98	125.9	158.7	170.1	70.2	73.7	112.3
45th	2.89	92.7	110.2	124.6	56.8	62.7	91.2
50th	3.29	75.5	98.2	111.8	53.1	62.7	92.9
55th	3.69	72.1	94.8	102.5	47.2	57.7	85.4
60th	4.77	66.5	87.0	97.4	38.4	46.1	80.9
65th	6.12	60.0	72.9	85.9	34.3	40.8	70.5
70th	6.58	50.2	60.8	69.9	30.6	36.9	72.6
75th	7.05	41.8	54.6	58.4	34.8	46.1	92.3
80th	6.68	44.2	52.1	59.3	37.1	62.6	113.1
85th	6.99	54.4	70.1	73.7	45.2	59.9	142.0
90th	7.79	86.8	91.9	99.0	59.4	71.4	199.5
II. Single families							
mean	3.50	27.2	22.9	37.8	42.2	40.7	76.3
55th	1.41	144.2	144.2	149.9	97.2	90.1	119.9
60th	1.49	74.5	73.8	87.9	87.7	83.1	121.5
65th	2.69	74.9	72.9	79.4	60.8	58.2	84.6
70th	5.25	70.3	69.1	69.5	39.1	36.0	48.8
75th	5.30	35.9	33.6	36.8	46.2	44.2	61.3
80th	6.51	57.9	55.3	58.4	32.1	28.1	47.7
85th	7.40	34.3	28.4	48.6	31.1	27.0	43.9
90th	13.94	19.1	17.7	35.8	18.8	17.6	32.3
95th	14.50	0.0	-1.3	1.8	32.4	27.1	55.4

Since the observed mean wealth gap between single immigrant and Canadian-born families is significant, both the DFL and the Oaxaca (1973) decompositions are meaningful. From Table 4, The DFL decompositions show that between 27% and 42% of the mean wealth gap can be explained in Model 1 where only age of the major income recipient is employed in constructing the re-weighting factor, and between 38% and 76% of the total gap is explained in Model 3 in which age of the major income recipient, lone-parent status, and permanent income factors are all employed in the logit regressions. Although the Oaxaca decomposition has some limitations as discussed earlier, it can be used to compare with the DFL decomposition of the mean wealth gap. The Oaxaca decomposition results reported in Table 5. They are almost the same as the DFL decompositions. They also suggest that the major income recipient's age is the most important factor in explaining the wealth gap, and that factors related to permanent income may also play an important role.

Table 5. Oaxaca decomposition of the mean gap between single families

	Scheme I			Scheme II		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Total percent explained	27.2	23.5	32.8	42.3	40.3	71.1
Percent explained by MIR age	27.2	27.2	33.1	42.3	42.1	49.4
Percent explained by lone-parent status	--	-3.7	-2.6	--	-1.8	1.2
Percent explained by permanent income factors	--	--	2.4	--	--	20.5

In summary, the unrestricted analysis shows that the main result of the restricted model is still valid when the restriction is relaxed. Over the range of the wealth distribution where immigrant families have higher wealth than Canadian-born families—from the 40th to 90th percentiles for married families, and from the 55th to 90th percentiles for single families—a significant portion of the wealth gap between immigrants and the Canadian-born can be explained by the major income recipient's (and spouse's) age, as well as factors related to permanent income. But at the bottom of the wealth distribution where immigrant families have lower wealth than Canadian-born families, the observed wealth gap cannot be explained by any of the factors that have been explored. This signifies that low-wealth families may behave differently from families of other wealth classes in their wealth accumulation process.

5. The cohort effect

The generalized quantile regression model presented in Equation (1) can also be employed to investigate cohort effects on the wealth gap. When the dummy variable of immigration status is replaced by a few dummy variables indicating periods of entry into Canada, the coefficient on a cohort dummy can be interpreted as observed wealth gaps between a typical Canadian-born family and an average immigrant family from this cohort. Immigrant families are divided here into three different cohorts according to years since migration of the major income recipient: families who arrived before 1976, between 1976 and 1985, and between 1986 and 1999. Particular attention will be paid to the 1976-1985 cohort, which had a worse entry position than its predecessors and a zero earnings assimilation rate, according to Baker and Benjamin (1994) and Bloom et al. (1995). The sample size and estimation results are contained in Table 6.

Some clear patterns are shown in Table 6. On average and along the wealth distribution, immigrant families with a major income recipient who arrived in Canada before 1976 have higher wealth than an average Canadian-born family, while those who arrived in Canada after 1985 have lower wealth. The wealth gaps are wider at the top than at the bottom of the distribution. The wealth position of the 1976-1985 cohort is somewhat better than their earnings position. Except over some small portions of the distributions where immigrant families have lower wealth than Canadian-born families, the wealth gaps are generally insignificant and not large. Married immigrant families of this cohort are found to have lower wealth than the average Canadian-born family only at the 25th percentile of the distribution, with the gap estimated to be -$12,500. For single immigrant families in this cohort, significant wealth gaps are found at the 10th, 50th and 60th percentiles— -$2,500, -$16,900, and -$24,400 respectively. But at the 90th and

95th percentiles, single immigrant families have significantly higher wealth than an average Canadian-born single family, with the wealth gaps estimated to be $183,500 and $305,700 respectively.

Table 6. Wealth gap by period of immigration (t-statistics in parentheses)

Cohort (N)	5th	10th	25th	40th	50th	60th	75th	90th	95th	mean
				Married families						
86-99 (524)	-0.64	-1.09	-3.8	-5.84	-7.1	-9.5	-14.3	-25.07	-38.61	-13.9
	(-3.42)	(-4.41)	(-8.63)	(-6.73)	(-7.04)	(-8.07)	(-6.62)	(-5.17)	(-4.07)	(-4.93)
76-85 (279)	-0.05	-0.49	-1.25	-0.09	0.44	0.25	0.5	-1.22	-6.94	-4.29
	(-0.17)	(-1.42)	(-2.03)	(-0.08)	(0.32)	(0.16)	(0.17)	(-0.19)	(-0.54)	(-1.09)
..-75 (943)	1.29	3.64	9.55	12.31	14.44	15.87	18.7	23.33	18.42	13.53
	(8.62)	(17.79)	(26.39)	(17.32)	(17.52)	(16.39)	(10.53)	(6.03)	(2.46)	(5.88)
				Single families						
86-99 (218)	-1.22	-0.6	-0.2	-1.07	-2.38	-4.41	-8.93	-12.91	-19.45	-6.43
	(-3.39)	(-6.78)	(-1.28)	(-3.23)	(-3.54)	(-5.24)	(-4.27)	(-3.31)	(-2.01)	(-3.80)
76-85 (155)	-0.53	-0.25	-0.14	-0.69	-1.69	-2.44	-1.32	18.35	30.57	3.04
	(-1.09)	(-2.18)	(-0.71)	(-1.70)	(-2.01)	(-2.41)	(-0.52)	(3.44)	(2.75)	(1.42)
..-75 (537)	0.56	0.1	1.5	5	7.45	10.68	14.05	18.6	25.71	9.56
	(3.11)	(1.90)	(15.84)	(23.07)	(16.40)	(18.76)	(9.76)	(6.54)	(4.04)	(7.26)

Note that since the major income recipient in a family from an early cohort of immigrants is likely to be older than one in a typical Canadian-born family, and a major income recipient from a later cohort is likely to be younger, the estimated wealth gap must be interpreted as the wealth difference between an average Canadian-born family and an average family from a specific cohort of immigrants. This is different from Section 3 where the wealth gap is interpreted as the wealth difference between an average immigrant family and an average Canadian-born family. In order to compare the wealth difference between Canadian-born and immigrant families of different cohorts, it is necessary to control family life cycle and other aspects of wealth accumulation. These results are contained in Table 7.[17]

As expected, the absolute wealth gaps are substantially reduced when the age of the major income recipient and spouse are controlled. For example, the median wealth gap between the 1986-1999 cohort of married immigrant families and an average Canadian-born family is estimated to be $71,000 (Table 6), but when the ages of the major income recipient and spouse are controlled, it becomes -$46,000 (Model 1). For families who arrived before 1976, the figures are $144,000 and $87,000 respectively. Similar results are obtained at other points of the distribution, and between single immigrant and Canadian-born families. The overall observation is that, given the ages of the major income recipient and spouse, recent immigrants still have lower wealth, and most immigrants who arrived before 1976 still have higher wealth, than their Canadian-born counterparts. When family size (or lone-parent status) and permanent income factors are also controlled (Models 2 and 3), the estimated wealth gaps are not too much different from those in Model 1 for the 1986-1999 cohort and the cohort who arrived before 1976.

[17] To save space, the coefficients on age of the major income recipient, permanent income factors, and family size, etc. are not presented in the text. They are available upon request.

However, for immigrants who arrived between 1976 and 1985, the results are quite interesting. Below the 60th percentile of the distribution, almost all these immigrants have lower wealth than their Canadian-born counterparts in Model 3. Although this is not inconsistent with the notion that immigrants who arrived between 1976 and 1985 are disadvantaged from an earnings perspective, it is unclear whether their disadvantaged wealth position is a result of their disadvantaged earnings position or the fact that they have been in Canada for a relatively short time.

Immigrant families who arrived in Canada before 1976 account for more than 50% of the immigrant population in the sample. They are observed to have higher wealth than Canadian-born families, even after controlling for several key factors of the wealth accumulation process. This means that, after a sufficiently long period of residency, immigrant families are able to outpace Canadian-born families in accumulating wealth. Given that family life cycle and permanent income factors were already controlled, the results seem to indicate that immigrant families have a higher savings rate than Canadian-born families.[18] The only exception might be the 1976-1980 sub-cohort of married immigrant families, where a significant portion was observed to be in a disadvantaged wealth position compared with both the 1981-1985 and the pre-1976 cohort of immigrants.

[18] Higher risk-taking in investments (and hence higher rate of returns) and higher inheritance are other factors that may contribute to the higher wealth of immigrants. However, according to SCF 1999, 10.5% of immigrant families invested in stocks of private and public companies, and 26.8% of their non-RRSP investments are held in stocks. The corresponding numbers for Canadian-born families are 11.4% and 27.4%. (In addition, the ratios of RRSP/LIRA to total assets for immigrant and Canadian-born families are 9.4% and 10% respectively).

Table 7. Cohort effect on wealth gap (t-statistics in parentheses)

Cohort	5th	10th	25th	40th	50th	60th	75th	90th	95th	Mean
Model 1				MARRIED FAMILIES						
1986-1999	-0.9	-1.56	-3	-3.64	-4.62	-4.81	-5.75	-9.05	-8.12	-10.5
	(-4.21)	(-3.84)	(-6.77)	(-5.63)	(-7.23)	(-5.11)	(-4.14)	(-2.86)	(-0.95)	(-3.56)
1976-1985	-0.19	-0.82	-1.48	-1.49	0.03	-0.45	-0.32	-2.41	-6.7	-4.98
	(-0.66)	(-1.40)	(-2.42)	(-1.69)	(0.04)	(-0.35)	(-0.17)	(-0.60)	(-0.67)	(-1.27)
before 1976	0.84	2.2	6.55	7.09	8.65	9.03	8.75	11.77	5.18	6.76
	(4.74)	(6.38)	(17.86)	(13.19)	(16.15)	(11.35)	(7.61)	(4.72)	(0.75)	(2.89)
				SINGLE FAMILIES						
1986-1999	-0.81	-0.25	-0.37	-1.08	-1.6	-2.53	-2.91	-5.93	-7.6	-4.45
	(-6.31)	(-4.02)	(-1.94)	(-7.26)	(-5.17)	(-5.36)	(-3.38)	(-2.00)	(-1.02)	(-2.67)
1976-1985	-0.1	-0.27	-0.58	-1.02	-1.04	-1.09	0.02	19.22	28	3.12
	(-0.90)	(-3.72)	(-2.23)	(-5.39)	(-2.73)	(-1.92)	(0.02)	(4.69)	(2.79)	(1.47)
before 1976	0	0	1.14	3.36	4.51	6.28	8.24	10.69	12.22	5.72
	(0)	(0)	(9.59)	(33.88)	(21.69)	(19.75)	(13.65)	(4.46)	(2.28)	(4.28)
Model 2				MARRIED FAMILIES						
1986-1999	-0.97	-1.63	-3.16	-3.72	-4.61	-5.46	-5.99	-10.83	-10.9	-10.83
	(-4.15)	(-4.49)	(-6.64)	(-5.44)	(-6.76)	(-5.49)	(-4.34)	(-3.64)	(-1.51)	(-3.81)
1976-1985	-0.26	-1	-1.32	-1.36	-0.39	-0.81	-1.15	-2.38	-7.44	-5.68
	(-0.78)	(-2.00)	(-2.01)	(-1.47)	(-0.43)	(-0.61)	(-0.64)	(-0.60)	(-0.84)	(-1.44)
before 1976	0.84	2.11	6.44	7.08	8.66	8.91	7.81	12.15	3.86	6.36
	(4.22)	(6.82)	(16.40)	(12.51)	(15.28)	(10.75)	(6.82)	(4.93)	(0.67)	(2.71)
				SINGLE FAMILIES						
1986-1999	-0.81	-0.25	-0.39	-1.05	-1.7	-2.51	-2.67	-5.4	-8.22	-4.36
	(-6.21)	(-3.93)	(-2.01)	(-5.84)	(-3.98)	(-5.69)	(-3.04)	(-2.00)	(-1.11)	(-2.62)
1976-1985	-0.1	-0.27	-0.58	-1.02	-0.91	-0.63	0.1	19.51	29.8	3.37
	(-0.90)	(-3.64)	(-2.19)	(-4.47)	(-1.70)	(-1.16)	(0.09)	(5.18)	(2.86)	(1.59)
before 1976	0	0	1.15	3.4	4.4	6.39	8.25	10.38	10.7	5.74
	(0)	(0)	(9.55)	(28.50)	(15.20)	(21.36)	(13.08)	(4.74)	(1.87)	(4.30)
Model 3				MARRIED FAMILIES						
1986-1999	-1.96	-3.1	-4.98	-5.37	-5.38	-5.68	-5.67	-9.9	-12.87	-14.25
	(-5.91)	(-9.32)	(-10.41)	(-7.89)	(-7.71)	(-6.60)	(-5.38)	(-5.06)	(-2.84)	(5.00)
1976-1985	-0.73	-1.28	-1.34	-2.27	-2.03	-1.76	0.38	-2.75	-5.71	-7.97
	(-1.55)	(-2.62)	(-2.04)	(-2.48)	(-2.18)	(-1.54)	(0.28)	(-1.07)	(-1.12)	(-2.04)
before 1976	0.7	1.86	5.05	7.18	7.9	8.65	10.04	10.17	9.27	5.67
	(2.40)	(6.38)	(12.52)	(12.78)	(13.70)	(12.10)	(11.50)	(6.32)	(2.46)	(2.42)
				SINGLE FAMILIES						
1986-1999	-1.24	-0.37	-0.8	-1.37	-2	-2.63	-2.56	-3.86	-0.66	-5.41
	(6.73)	(-4.04)	(-4.74)	(-6.15)	(-6.96)	(-6.90)	(-4.05)	(-2.15)	(-0.13)	(-3.30)
1976-1985	-0.2	-0.42	-0.86	-1.35	-1.35	-1.09	0.35	19.34	25.43	2.18
	(-1.30)	(-5.38)	(-3.47)	(-5.01)	(-3.75)	(-2.36)	(0.47)	(9.05)	(3.43)	(1.05)
before 1976	0	-0.05	0.79	3.22	3.9	5.86	7.69	13.01	10.86	5.04
	(-0.02)	(-0.83)	(6.96)	(21.61)	(19.79)	(22.62)	(17.59)	(11.13)	(2.66)	(3.85)

6. Summary and conclusions

The economic assimilation of immigrants is a key concern for economists and policy makers. Most studies focus on the earnings assimilation of immigrants. This article attempts to assess the assimilation issue from a wealth perspective by studying wealth differences between immigrant and Canadian-born families and uncovering the factors that may explain the wealth gap.

This study found that, on average and along the upper segment (from the 55^{th} to 95^{th} percentiles) of the wealth distribution, single immigrant families have higher wealth than their Canadian-born counterparts. The wealth gap ranges from $14,000 to $145,000, with a mean of $35,000. Among married families, immigrants have higher wealth than the Canadian-born from the 40^{th} to 90^{th} percentiles, with the gap ranging between $20,000 and $78,000. However, at the lower tail of the distribution, evidence suggests that low-wealth immigrants have lower wealth than their Canadian-born counterparts, although the gaps are well below $10,000. Various decomposition practices indicate that the age of the major income recipient, which captures the effect of a family's life cycle, as well as factors related to permanent income, such as education and gender can explain a significant portion of the wealth gap. However, at the bottom of the wealth distribution where immigrants have lower wealth than Canadian-born families, none of the wealth gap can be explained by age of the major income recipient, permanent income factors, or family size. This seems to indicate that low-wealth families may behave differently in their accumulation of wealth.

It was also found that the 1986-1999 cohort of immigrant families have lower wealth, and immigrants who arrived in Canada before 1976 have higher wealth, even after controlling several key factors of wealth accumulation. The results show that after a sufficient period of residency, immigrant families are capable of outpacing Canadian-born families in wealth accumulation. However, some evidence suggests that the 1976-1980 cohort may be an exception, since they are in a disadvantaged wealth position relative to both their predecessors and the 1981-1986 cohort. But it is unclear whether this is due to their disadvantaged earnings position or the fact that they have not yet resided long enough in Canada.

There are a few caveats to this study. In a cross-sectional survey, the ability to identify and estimate some key parameters is limited. A longitudinal study of wealth with additional information on pensions and savings would be helpful for further research.

Appendix

Table A1. Descriptive Statistics

	Married families				Single families			
	Immigrant		Canadian-born		Immigrant		Canadian-born	
	Mean	std.err.	Mean	std.err.	Mean	std.err.	Mean	std.err.
Age of MIR	49.7	0.34	46.9	0.17	50.5	0.6	45.8	0.26
Age of spouse	47.9	0.33	45.5	0.16	--	--	--	--
Female MIR	0.25	0.01	0.22	0.01	0.58	0.02	0.55	0.01
Female spouse	0.76	0.01	0.78	0.01	--	--	--	--
Family size	3.45	0.03	3.09	0.01	1.7	0.04	1.4	0.01
lone parent	--	--	--	--	0.14	0.01	0.11	0.01
MIR ed: 0-8 yr.	0.123	0.008	0.096	0.003	0.153	0.012	0.123	0.005
MIR ed: 9 -13 yr.	0.104	0.007	0.159	0.004	0.11	0.01	0.182	0.005
MIR ed: high school	0.151	0.009	0.158	0.004	0.149	0.012	0.134	0.005
MIR ed: P.S.	0.32	0.011	0.376	0.006	0.362	0.016	0.378	0.007
MIR ed: University	0.168	0.009	0.143	0.004	0.149	0.012	0.139	0.005
MIR ed: above Univ	0.134	0.008	0.068	0.003	0.077	0.009	0.043	0.003
spo ed: 0-8 yr.	0.143	0.008	0.092	0.003	--	--	--	--
spo ed: 9 -13 yr.	0.121	0.008	0.175	0.004	--	--	--	--
spo ed: high school	0.202	0.01	0.199	0.005	--	--	--	--
spo ed: P.S.	0.306	0.011	0.369	0.006	--	--	--	--
spo ed: Univ.	0.151	0.009	0.131	0.004	--	--	--	--
spo ed: above Univ	0.078	0.006	0.034	0.002	--	--	--	--
IMG 86--99	0.33	0.011	--	--	0.31	0.015	--	--
IMG 76--85	0.16	0.009	--	--	0.18	0.013	--	--
IMG before 1976	0.52	0.012	--	--	0.51	0.017	--	--
Sample size	1,746	7,849			910	5,296		

Table A2: Family pension and social security incomes (1998 $)

	Mean	Std. err	Median	Sample size
Married families				
Immigrant	33,150	913	32,430	445
Canadian-born	34,470	454	32,410	1,899
Single families				
Immigrant	22,090	813	18,790	308
Canadian-born	22,070	361	18,620	1,594

Source: SFS 1999 (families with an MIR aged 55 or over). Total pension and social security income include income from Canada/Quebec pension plan, private pension incomes, Old Age Security and Guaranteed Income Supplement.

Table A3. Selected generalized quantile regression results: restricted models[19]

1. Model 1: Married families

OLS regression

Source	SS	df	MS		
Model	1269444.43	11	115404.039	Number of obs	= 9595
Residual	47320300.6	9583	4937.94225	F(11, 9583)	= 23.37
				Prob > F	= 0.0000
				R-squared	= 0.0261
				Adj R-squared	= 0.0250
Total	48589745.1	9594	5064.59715	Root MSE	= 70.27

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.7448278	1.73745	-0.43	0.668	-4.150596	2.660941
age_1m	-9.372401	5.312285	-1.76	0.078	-19.7856	1.0408
age_2m	-8.015865	2.710782	-2.96	0.003	-13.32957	-2.702159
age_4m	5.320138	2.569418	2.07	0.038	.2835346	10.35674
age_5m	10.55492	3.652153	2.89	0.004	3.395926	17.71391
age_6m	5.671805	4.718975	1.20	0.229	-3.578383	14.92199
age_1s	-10.32146	4.514527	-2.29	0.022	-19.17089	-1.472034
age_2s	-4.879969	2.648117	-1.84	0.065	-10.07084	.3109003
age_4s	9.206334	2.606652	3.53	0.000	4.096743	14.31592
age_5s	8.044998	3.765699	2.14	0.033	.6634317	15.42657
age_6s	3.982364	4.912349	0.81	0.418	-5.646878	13.61161
_cons	23.30265	1.576913	14.78	0.000	20.21157	26.39374

.1 Quantile regression — Number of obs = 9595
Raw sum of deviations 51650.59 (about 1.005)
Min sum of deviations 50703.63 — Pseudo R2 = 0.0183

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.735	.2112352	-3.48	0.001	-1.149066	-.3209344
age_1m	-1.386	.5710028	-2.43	0.015	-2.505286	-.2667138
age_2m	-.7325	.3125107	-2.34	0.019	-1.345087	-.1199129
age_4m	1.035	.3407789	3.04	0.002	.3670013	1.702999
age_5m	.7419999	.4591873	1.62	0.106	-.1581044	1.642104
age_6m	1.0016	.612227	1.64	0.102	-.1984944	2.201694
age_1s	-1.4245	.5064777	-2.81	0.005	-2.417304	-.4316965
age_2s	-.704	.3141529	-2.24	0.025	-1.319806	-.0881939
age_4s	.318	.3361553	0.95	0.344	-.3409355	.9769354
age_5s	2.025	.4660822	4.34	0.000	1.11138	2.93862
age_6s	1.4584	.6353818	2.30	0.022	.2129171	2.703883
_cons	1.74	.1892232	9.20	0.000	1.369083	2.110917

.25 Quantile regression — Number of obs = 9595
Raw sum of deviations 120281.7 (about 4.8221998)
Min sum of deviations 114883 — Pseudo R2 = 0.0449

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.2890999	.3052363	-0.95	0.344	-.8874276	.3092278
age_1m	-1.9109	.8837824	-2.16	0.031	-3.6433	-.1784996
age_2m	-1.2352	.4807481	-2.57	0.010	-2.177568	-.292832
age_4m	2.0945	.4769762	4.39	0.000	1.159526	3.029474
age_5m	2.18	.6516262	3.35	0.001	.9026746	3.457325
age_6m	2.013799	.8235855	2.45	0.014	.3993976	3.628201
age_1s	-3.5741	.7895041	-4.53	0.000	-5.121695	-2.026505
age_2s	-2.145	.4674449	-4.59	0.000	-3.061291	-1.228709
age_4s	1.175	.4871468	2.41	0.016	.2200894	2.129911
age_5s	4.170301	.6608849	6.31	0.000	2.874826	5.465775
age_6s	3.591201	.8573057	4.19	0.000	1.9107	5.271701
_cons	5.345	.2684985	19.91	0.000	4.818686	5.871314

[19] Definitions of variables are provided in Table A4.

Median regression — Number of obs = 9595
Raw sum of deviations 206408 (about 13.3461)
Min sum of deviations 191865.2 — Pseudo R2 = 0.0705

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	.6299992	.368098	1.71	0.087	-.0915507	1.351549
age_1m	-4.83	1.053709	-4.58	0.000	-6.895493	-2.764507
age_2m	-2.555	.5795081	-4.41	0.000	-3.690958	-1.419041
age_4m	4.260001	.5285768	8.06	0.000	3.223879	5.296123
age_5m	6.7918	.7423165	9.15	0.000	5.336703	8.246898
age_6m	3.860001	.9598669	4.02	0.000	1.978459	5.741544
age_1s	-6.417301	.9259151	-6.93	0.000	-8.23229	-4.602311
age_2s	-3.637301	.5624277	-6.47	0.000	-4.739778	-2.534823
age_4s	4.0327	.5395898	7.47	0.000	2.97499	5.09041
age_5s	5.902699	.7711626	7.65	0.000	4.391057	7.41434
age_6s	5.242699	1.003002	5.23	0.000	3.276603	7.208795
_cons	11.8373	.3270133	36.20	0.000	11.19629	12.47832

.75 Quantile regression — Number of obs = 9595
Raw sum of deviations 238098.9 (about 28.941)
Min sum of deviations 218763.9 — Pseudo R2 = 0.0812

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	1.279999	.8007605	1.60	0.110	-.289661	2.849659
age_1m	-9.483	2.295516	-4.13	0.000	-13.9827	-4.983303
age_2m	-5.6	1.183798	-4.73	0.000	-7.920494	-3.279506
age_4m	8.249998	1.070475	7.71	0.000	6.151641	10.34836
age_5m	14.04	1.551039	9.05	0.000	10.99963	17.08036
age_6m	7.519995	2.162903	3.48	0.001	3.280247	11.75974
age_1s	-11.907	1.963169	-6.07	0.000	-15.75523	-8.058775
age_2s	-6.599901	1.15326	-5.72	0.000	-8.860535	-4.339266
age_4s	6.900002	1.092731	6.31	0.000	4.758017	9.041986
age_5s	7.59	1.629468	4.66	0.000	4.395899	10.7841
age_6s	5.460003	2.284075	2.39	0.017	.9827323	9.937274
_cons	24.12	.7018604	34.37	0.000	22.74421	25.4958

.9 Quantile regression — Number of obs = 9595
Raw sum of deviations 200718.2 (about 55.599998)
Min sum of deviations 184809.2 — Pseudo R2 = 0.0793

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	1.3025	2.034944	0.64	0.522	-2.686421	5.29142
age_1m	-15.5955	6.473944	-2.41	0.016	-28.2858	-2.905201
age_2m	-11.233	2.925668	-3.84	0.000	-16.96793	-5.498072
age_4m	16.8501	2.674183	6.30	0.000	11.60814	22.09207
age_5m	38.6226	4.049418	9.54	0.000	30.68488	46.56032
age_6m	27.4901	5.412002	5.08	0.000	16.88143	38.09877
age_1s	-23.1309	4.955043	-4.67	0.000	-32.84383	-13.41797
age_2s	-12.4064	2.863662	-4.33	0.000	-18.01979	-6.79302
age_4s	11.7336	2.723068	4.31	0.000	6.395807	17.07139
age_5s	.4984968	4.169168	0.12	0.905	-7.673955	8.670949
age_6s	-6.625	5.738162	-1.15	0.248	-17.87301	4.623011
_cons	45.2764	1.818854	24.89	0.000	41.71106	48.84174

Model 1. Single families

OLS regression

Source	SS	df	MS		
Model	174092.764	6	29015.4607	Number of obs	= 6206
Residual	4934780.32	6199	796.060707	F(6, 6199)	= 36.45
				Prob > F	= 0.0000
				R-squared	= 0.0341
				Adj R-squared	= 0.0331
Total	5108873.09	6205	823.347798	Root MSE	= 28.215

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	2.047798	.9775453	2.09	0.036	.1314706	3.964126
age_1m	-5.32501	1.249324	-4.26	0.000	-7.774119	-2.875901
age_2m	-.9321385	1.116259	-0.84	0.404	-3.120394	1.256117
age_4m	6.096838	1.244037	4.90	0.000	3.658095	8.535582
age_5m	9.154444	1.421193	6.44	0.000	6.368414	11.94048
age_6m	8.779809	1.111174	7.90	0.000	6.601524	10.9581
_cons	8.173877	.8119998	10.07	0.000	6.582076	9.765678

.1 Quantile regression — Number of obs = 6206
Raw sum of deviations 15018.38 (about -.015)
Min sum of deviations 14869.92 — Pseudo R2 = 0.0099

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.125	.0315092	-3.97	0.000	-.1867691	-.0632309
age_1m	-.9	.0431807	-20.84	0.000	-.9846491	-.8153509
age_2m	-.325	.0346249	-9.39	0.000	-.3928768	-.2571232
age_4m	.005	.0351856	0.14	0.887	-.063976	.073976
age_5m	.0751	.0393964	1.91	0.057	-.0021306	.1523306
age_6m	.225	.0314238	7.16	0.000	.1633985	.2866015
_cons	.025	.0246302	1.02	0.310	-.0232836	.0732836

.25 Quantile regression — Number of obs = 6206
Raw sum of deviations 35619.36 (about .24420001)
Min sum of deviations 35268.51 — Pseudo R2 = 0.0099

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.25	.0956787	-2.61	0.009	-.4375634	-.0624366
age_1m	-.405	.137167	-2.95	0.003	-.6738949	-.1361051
age_2m	-.14	.1127346	-1.24	0.214	-.3609989	.0809989
age_4m	.18	.1162715	1.55	0.122	-.0479325	.4079325
age_5m	.4	.1283741	3.12	0.002	.1483422	.6516578
age_6m	1.28	.1009453	12.68	0.000	1.082112	1.477888
_cons	.37	.0800627	4.62	0.000	.2130494	.5269507

Median regression — Number of obs = 6206
Raw sum of deviations 66718.79 (about 2.75)
Min sum of deviations 63324.21 — Pseudo R2 = 0.0509

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.25	.1549962	-1.61	0.107	-.5538464	.0538464
age_1m	-3.11	.2324273	-13.38	0.000	-3.565638	-2.654362
age_2m	-1.89	.1894279	-9.98	0.000	-2.261344	-1.518656
age_4m	1.82	.1921283	9.47	0.000	1.443362	2.196638
age_5m	3.1293	.2089033	14.98	0.000	2.719777	3.538823
age_6m	6.02	.165373	36.40	0.000	5.695812	6.344189
_cons	3.28	.1287388	25.48	0.000	3.027627	3.532373

.75 Quantile regression — Number of obs = 6206
Raw sum of deviations 81248.92 (about 12.1445)
Min sum of deviations 74004.8 — Pseudo R2 = 0.0892

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	1.21	.4184961	2.89	0.004	.3896024	2.030397
age_1m	-8.9725	.6296604	-14.25	0.000	-10.20685	-7.738147
age_2m	-4.5725	.5243312	-8.72	0.000	-5.600371	-3.544629
age_4m	5.6475	.5573582	10.13	0.000	4.554885	6.740115
age_5m	11.2175	.5785744	19.39	0.000	10.08329	12.35171
age_6m	10.8275	.465409	23.26	0.000	9.915136	11.73986
_cons	9.9725	.3513467	28.38	0.000	9.283739	10.66126

.9 Quantile regression — Number of obs = 6206
Raw sum of deviations 66923.46 (about 28.0287)
Min sum of deviations 62024.53 — Pseudo R2 = 0.0732

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	5.667999	2.085519	2.72	0.007	1.579659	9.75634
age_1m	-15.952	2.933937	-5.44	0.000	-21.70353	-10.20047
age_2m	-5.102001	2.467847	-2.07	0.039	-9.939837	-.2641651
age_4m	10.298	2.862875	3.60	0.000	4.685771	15.91023
age_5m	24.3386	2.907145	8.37	0.000	18.63959	30.03761
age_6m	18.08	2.404546	7.52	0.000	13.36626	22.79374
_cons	21.502	1.803292	11.92	0.000	17.96692	25.03708

Model 2: Married families

OLS regression

Source	SS	df	MS		
Model	1286796.99	12	107233.082	Number of obs =	9595
Residual	47302948.1	9582	4936.64664	F(12, 9582) =	21.72
				Prob > F =	0.0000
				R-squared =	0.0265
				Adj R-squared =	0.0253
Total	48589745.1	9594	5064.59715	Root MSE =	70.261

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-1.252008	1.758158	-0.71	0.476	-4.69837	2.194353
age_1m	-8.486194	5.332579	-1.59	0.112	-18.93918	1.966788
age_2m	-7.606801	2.719194	-2.80	0.005	-12.937	-2.276606
age_4m	5.672185	2.575934	2.20	0.028	.6228084	10.72156
age_5m	11.54044	3.689313	3.13	0.002	4.308603	18.77227
age_6m	6.758808	4.753843	1.42	0.155	-2.559731	16.07735
age_1s	-9.542304	4.533025	-2.11	0.035	-18.42799	-.6566152
age_2s	-4.608717	2.65172	-1.74	0.082	-9.806649	.5892142
age_4s	9.754452	2.622656	3.72	0.000	4.613491	14.89541
age_5s	9.083061	3.805697	2.39	0.017	1.62309	16.54303
age_6s	5.236101	4.957017	1.06	0.291	-4.480701	14.9529
fmsz27	1.26932	.6770258	1.87	0.061	-.0577941	2.596433
_cons	18.42381	3.042659	6.06	0.000	12.45955	24.38806

.1 Quantile regression — Number of obs = 9595
Raw sum of deviations 51650.59 (about 1.005)
Min sum of deviations 50701.16 — Pseudo R2 = 0.0184

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.7199583	.2122166	-3.39	0.001	-1.135948	-.3039689
age_1m	-1.300667	.5813541	-2.24	0.025	-2.440244	-.1610897
age_2m	-.6206667	.3137306	-1.98	0.048	-1.235645	-.0056883
age_4m	1.052875	.341437	3.08	0.002	.3835861	1.722164
age_5m	.8334833	.4631007	1.80	0.072	-.0742921	1.741259
age_6m	.9393496	.617229	1.52	0.128	-.2705497	2.149249
age_1s	-1.369717	.5240545	-2.61	0.009	-2.396974	-.3424589
age_2s	-.702875	.3203131	-2.19	0.028	-1.330756	-.0749936
age_4s	.3665166	.345955	1.06	0.289	-.3116283	1.044662
age_5s	2.040042	.4836905	4.22	0.000	1.091906	2.988177
age_6s	1.66065	.6575123	2.53	0.012	.371787	2.949513
fmsz27	.0535417	.0863274	0.62	0.535	-.1156782	.2227616
_cons	1.492917	.4010867	3.72	0.000	.7067019	2.279132

.25 Quantile regression — Number of obs = 9595
Raw sum of deviations 120281.7 (about 4.8221998)
Min sum of deviations 114861.9 — Pseudo R2 = 0.0451

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.3671999	.289464	-1.27	0.205	-.9346105	.2002107
age_1m	-1.6718	.8448648	-1.98	0.048	-3.327914	-.0156865
age_2m	-1.0571	.4494765	-2.35	0.019	-1.938169	-.1760313
age_4m	2.0854	.448289	4.65	0.000	1.206659	2.964141
age_5m	2.3253	.6151703	3.78	0.000	1.119437	3.531164
age_6m	2.1	.7767098	2.70	0.007	.5774842	3.622515
age_1s	-3.5121	.7431165	-4.73	0.000	-4.968766	-2.055434
age_2s	-2.0815	.437749	-4.76	0.000	-2.939581	-1.22342
age_4s	1.386	.4594645	3.02	0.003	.4853522	2.286647
age_5s	4.4859	.6267946	7.16	0.000	3.25725	5.71455
age_6s	3.9213	.8111071	4.83	0.000	2.331358	5.511241
fmsz27	.2053	.1126227	1.82	0.068	-.0154642	.4260643
_cons	4.5181	.5124793	8.82	0.000	3.513532	5.522668

Median regression — Number of obs = 9595
Raw sum of deviations 206408 (about 13.3461)
Min sum of deviations 191814.9 — Pseudo R2 = 0.0707

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	.3650007	.4331749	0.84	0.399	-.4841137	1.214115
age_1m	-4.2046	1.227193	-3.43	0.001	-6.610157	-1.799043
age_2m	-2.311	.6763741	-3.42	0.001	-3.636837	-.9851639
age_4m	4.316699	.618971	6.97	0.000	3.103385	5.530013
age_5m	6.916798	.8779168	7.88	0.000	5.195896	8.637701
age_6m	3.7268	1.127225	3.31	0.001	1.5172	5.9364
age_1s	-6.6483	1.083541	-6.14	0.000	-8.77227	-4.52433
age_2s	-3.7347	.656137	-5.69	0.000	-5.020868	-2.448533
age_4s	4.255	.6354282	6.70	0.000	3.009426	5.500574
age_5s	6.435	.9126546	7.05	0.000	4.646004	8.223996
age_6s	5.789899	1.18113	4.90	0.000	3.474635	8.105163
fmsz27	.3249998	.1641113	1.98	0.048	.0033068	.6466927
_cons	10.5983	.7539369	14.06	0.000	9.120425	12.07618

.75 Quantile regression — Number of obs = 9595
Raw sum of deviations 238098.9 (about 28.941)
Min sum of deviations 218560.5 — Pseudo R2 = 0.0821

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	.485	.8678834	0.56	0.576	-1.216235	2.186235
age_1m	-9.135	2.471543	-3.70	0.000	-13.97975	-4.290253
age_2m	-5.315001	1.280729	-4.15	0.000	-7.825501	-2.8045
age_4m	8.450001	1.162072	7.27	0.000	6.172094	10.72791
age_5m	15.2165	1.711364	8.89	0.000	11.86186	18.57114
age_6m	9.096501	2.367737	3.84	0.000	4.455235	13.73777
age_1s	-10.97	2.091791	-5.24	0.000	-15.07035	-6.869646
age_2s	-5.959999	1.247435	-4.78	0.000	-8.405236	-3.514763
age_4s	7.715001	1.197329	6.44	0.000	5.367983	10.06202
age_5s	8.5985	1.796269	4.79	0.000	5.077433	12.11957
age_6s	6.241901	2.500755	2.50	0.013	1.339893	11.14391
fmsz27	.9750005	.3201876	3.05	0.002	.347365	1.602636
_cons	20.1	1.426218	14.09	0.000	17.30431	22.89569

.9 Quantile regression — Number of obs = 9595
Raw sum of deviations 200718.2 (about 55.599998)
Min sum of deviations 184536.7 — Pseudo R2 = 0.0806

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	.6600005	2.161932	0.31	0.760	-3.577843	4.897844
age_1m	-13.5424	6.81345	-1.99	0.047	-26.8982	-.1865944
age_2m	-9.854899	3.097778	-3.18	0.001	-15.9272	-3.782598
age_4m	18.0351	2.8062	6.43	0.000	12.53436	23.53585
age_5m	38.9321	4.310991	9.03	0.000	30.48165	47.38255
age_6m	29.9751	5.818078	5.15	0.000	18.57044	41.37977
age_1s	-21.9876	5.275879	-4.17	0.000	-32.32944	-11.64576
age_2s	-12.4001	3.018855	-4.11	0.000	-18.31769	-6.482506
age_4s	10.6625	2.901818	3.67	0.000	4.974321	16.35068
age_5s	3.389901	4.49572	0.75	0.451	-5.422661	12.20246
age_6s	-5.220099	6.15054	-0.85	0.396	-17.27646	6.836259
fmsz27	2.6525	.7717636	3.44	0.001	1.139681	4.16532
_cons	35.44	3.481675	10.18	0.000	28.61518	42.26482

model 2: Single families

OLS regression

Source	SS	df	MS	Number of obs =	6206
Model	177389.825	7	25341.4036	F(7, 6198) =	31.85
Residual	4931483.26	6198	795.65719	Prob > F =	0.0000
				R-squared =	0.0347
				Adj R-squared =	0.0336
Total	5108873.09	6205	823.347798	Root MSE =	28.207

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	2.138012	.9783018	2.19	0.029	.2202009	4.055823
age_1m	-5.80894	1.271431	-4.57	0.000	-8.301385	-3.316496
age_2m	-1.182487	1.122732	-1.05	0.292	-3.383431	1.018458
age_4m	5.722914	1.257213	4.55	0.000	3.25834	8.187488
age_5m	8.532543	1.453307	5.87	0.000	5.683558	11.38153
age_6m	8.128358	1.156069	7.03	0.000	5.862062	10.39465
lone_p	-2.390763	1.174454	-2.04	0.042	-4.6931	-.0884257
_cons	8.807636	.8694464	10.13	0.000	7.103219	10.51205

.1 Quantile regression — Number of obs = 6206
Raw sum of deviations 15018.38 (about -.015)
Min sum of deviations 14869.82 — Pseudo R2 = 0.0099

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.1381	.0319222	-4.33	0.000	-.2006786	-.0755213
age_1m	-.8834	.0431694	-20.46	0.000	-.968027	-.798773
age_2m	-.3215	.0340897	-9.43	0.000	-.3883276	-.2546724
age_4m	.0135	.0353861	0.38	0.703	-.0558691	.0828691
age_5m	.0786	.0405799	1.94	0.053	-.0009506	.1581506
age_6m	.2416	.033069	7.31	0.000	.1767732	.3064267
lone_p	.0186	.0282797	0.66	0.511	-.036838	.074038
_cons	.0215	.0257302	0.84	0.403	-.0289401	.0719401

.25 Quantile regression — Number of obs = 6206
Raw sum of deviations 35619.36 (about .24420001)
Min sum of deviations 35267.01 — Pseudo R2 = 0.0099

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.2575	.092296	-2.79	0.005	-.4384322	-.0765678
age_1m	-.4468	.1360222	-3.28	0.001	-.7134507	-.1801493
age_2m	-.1639	.110168	-1.49	0.137	-.3798675	.0520674
age_4m	.1682	.1154111	1.46	0.145	-.0580457	.3944457
age_5m	.3607	.1296404	2.78	0.005	.1065599	.6148401
age_6m	1.2407	.105281	11.78	0.000	1.034313	1.447087
lone_p	-.0843	.0956975	-0.88	0.378	-.2719002	.1033003
_cons	.4168	.0866703	4.81	0.000	.2468961	.5867039

Median regression — Number of obs = 6206
Raw sum of deviations 66718.79 (about 2.75)
Min sum of deviations 63313.62 — Pseudo R2 = 0.0510

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.205	.2044484	-1.00	0.316	-.6057897	.1957898
age_1m	-3.1451	.3090923	-10.18	0.000	-3.751028	-2.539172
age_2m	-1.9052	.2501821	-7.62	0.000	-2.395644	-1.414756
age_4m	1.7509	.2574658	6.80	0.000	1.246178	2.255622
age_5m	2.9942	.2849712	10.51	0.000	2.435557	3.552842
age_6m	5.9299	.2312539	25.64	0.000	5.476562	6.383238
lone_p	-.2981	.2208112	-1.35	0.177	-.7309665	.1347665
_cons	3.3701	.1857648	18.14	0.000	3.005937	3.734263

.75 Quantile regression — Number of obs = 6206
Raw sum of deviations 81248.92 (about 12.1445)
Min sum of deviations 73910.34 — Pseudo R2 = 0.0903

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	1.349999	.400552	3.37	0.001	.5647782	2.13522
age_1m	-9.4558	.5927162	-15.95	0.000	-10.61773	-8.293871
age_2m	-5.276801	.4967071	-10.62	0.000	-6.250519	-4.303082
age_4m	4.9942	.5406991	9.24	0.000	3.934242	6.054157
age_5m	10.2442	.5743705	17.84	0.000	9.118235	11.37017
age_6m	9.994199	.4728504	21.14	0.000	9.067248	10.92115
lone_p	-1.3718	.4536663	-3.02	0.003	-2.261143	-.482457
_cons	10.8058	.3701344	29.19	0.000	10.08021	11.53139

.9 Quantile regression — Number of obs = 6206
Raw sum of deviations 66923.46 (about 28.0287)
Min sum of deviations 61761.97 — Pseudo R2 = 0.0771

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	5.159401	1.635448	3.15	0.002	1.953357	8.365445
age_1m	-16.42	2.189873	-7.50	0.000	-20.71291	-12.12709
age_2m	-6.239	1.923366	-3.24	0.001	-10.00946	-2.468536
age_4m	9.604998	2.255098	4.26	0.000	5.184224	14.02577
age_5m	22.685	2.361764	9.61	0.000	18.05512	27.31488
age_6m	16.4945	1.990427	8.29	0.000	12.59257	20.39643
lone_p	-6.555599	1.735367	-3.78	0.000	-9.95752	-3.153678
_cons	23.1556	1.53919	15.04	0.000	20.13825	26.17295

Model 3. Married families

OLS regression

Source	SS	df	MS		Number of obs =	9595
					F(33, 9561) =	14.82
Model	2364079.64	33	71638.7768		Prob > F =	0.0000
Residual	46225665.4	9561	4834.81492		R-squared =	0.0487
					Adj R-squared =	0.0454
Total	48589745.1	9594	5064.59715		Root MSE =	69.533

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-3.028583	1.770768	-1.71	0.087	-6.499663	.4424966
age_1m	-6.913408	5.333866	-1.30	0.195	-17.36892	3.542101
age_2m	-8.31906	2.721797	-3.06	0.002	-13.65436	-2.983759
age_4m	5.155992	2.599865	1.98	0.047	.0597057	10.25228
age_5m	13.06048	3.793656	3.44	0.001	5.624112	20.49685
age_6m	9.79736	4.95974	1.98	0.048	.0752174	19.5195
age_1s	-7.019513	4.565563	-1.54	0.124	-15.96898	1.929958
age_2s	-4.801123	2.653793	-1.81	0.070	-10.00312	.4008734
age_4s	11.32402	2.63431	4.30	0.000	6.160217	16.48783
age_5s	13.25817	3.862315	3.43	0.001	5.687217	20.82913
age_6s	12.22906	5.049869	2.42	0.015	2.330247	22.12787
fmsz27	1.557893	.6743649	2.31	0.021	.2359945	2.879791
femal_m	1.72221	5.25555	0.33	0.743	-8.579782	12.0242
ed0_8m	-7.543371	3.555323	-2.12	0.034	-14.51256	-.5741848
ed9_13m	-2.331468	2.957144	-0.79	0.430	-8.128099	3.465162
ed_psm	-.3419116	2.493164	-0.14	0.891	-5.229042	4.545219
ed_um	13.25476	3.231011	4.10	0.000	6.921293	19.58823
ed_abum	21.9878	3.757955	5.85	0.000	14.62141	29.35419
ed0_8s	-2.900782	6.819357	-0.43	0.671	-16.26817	10.4666
ed9_13s	-1.617007	5.34507	-0.30	0.762	-12.09448	8.860464
ed_pss	-.2054964	4.487763	-0.05	0.963	-9.002464	8.591471
ed_us	3.634291	5.436891	0.67	0.504	-7.023168	14.29175
ed_abus	4.941923	7.069264	0.70	0.485	-8.915334	18.79918
ed_sx1m	-12.12264	8.660346	-1.40	0.162	-29.09875	4.853477
ed_sx2m	-8.916497	6.635925	-1.34	0.179	-21.92432	4.091324
ed_sx4m	.0340322	5.172547	0.01	0.995	-10.10526	10.17332
ed_sx5m	-11.33357	6.157495	-1.84	0.066	-23.40356	.7364285
ed_sx6m	-10.20507	7.951173	-1.28	0.199	-25.79106	5.380916
ed_sx1s	-9.931271	7.587629	-1.31	0.191	-24.80463	4.942092
ed_sx2s	-4.721376	5.943287	-0.79	0.427	-16.37148	6.928727
ed_sx4s	1.464326	4.934252	0.30	0.767	-8.207855	11.13651
ed_sx5s	2.916632	6.156065	0.47	0.636	-9.150562	14.98383
ed_sx6s	1.820452	8.55965	0.21	0.832	-14.95828	18.59918
_cons	14.45514	3.776933	3.83	0.000	7.051546	21.85872

.1 Quantile regression — Number of obs = 9595
Raw sum of deviations 51650.59 (about 1.005)
Min sum of deviations 49968.94 — Pseudo R2 = 0.0326

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-1.468909	.2264972	-6.49	0.000	-1.912892	-1.024927
age_1m	-1.648764	.6142577	-2.68	0.007	-2.852839	-.4446883
age_2m	-.9157727	.3113916	-2.94	0.003	-1.526166	-.3053791
age_4m	1.053555	.3625818	2.91	0.004	.3428173	1.764292
age_5m	1.765027	.4975556	3.55	0.000	.7897127	2.740342
age_6m	2.609509	.6624828	3.94	0.000	1.310902	3.908116
age_1s	-1.468582	.548296	-2.68	0.007	-2.543358	-.3938053
age_2s	-.6313546	.3173089	-1.99	0.047	-1.253347	-.0093619
age_4s	.8504819	.3569964	2.38	0.017	.1506933	1.550271
age_5s	2.417009	.5046978	4.79	0.000	1.427695	3.406324
age_6s	2.149655	.6865228	3.13	0.002	.8039245	3.495385
fmsz27	.3402273	.0902906	3.77	0.000	.1632385	.5172161
femal_m	.1239273	.8156518	0.15	0.879	-1.474923	1.722778
ed0_8m	-.1404182	.4319988	-0.33	0.745	-.9872274	.7063911
ed9_13m	.028291	.364336	0.08	0.938	-.6858849	.7424669
ed_psm	.6347092	.3296496	1.93	0.054	-.011474	1.280892
ed_um	1.625836	.4215894	3.86	0.000	.7994319	2.452241
ed_abum	3.513709	.4936764	7.12	0.000	2.545999	4.48142
ed0_8s	-1.5717	.9306746	-1.69	0.091	-3.39602	.2526196
ed9_13s	-1.287255	.7957482	-1.62	0.106	-2.84709	.2725808
ed_pss	-.3802455	.6558305	-0.58	0.562	-1.665812	.9053214
ed_us	.6250091	.7862303	0.79	0.427	-.9161691	2.166187
ed_abus	-.2089272	.9197686	-0.23	0.820	-2.011869	1.594014
ed_sx1m	-1.663518	1.081478	-1.54	0.124	-3.783445	.4564083
ed_sx2m	-.8604729	.83275	-1.03	0.301	-2.49284	.7718937
ed_sx4m	.1931726	.6892421	0.28	0.779	-1.157888	1.544233
ed_sx5m	-1.568964	.8168955	-1.92	0.055	-3.170252	.0323246
ed_sx6m	-2.258218	1.058798	-2.13	0.033	-4.333687	-.1827498
ed_sx1s	-1.736882	1.027835	-1.69	0.091	-3.751656	.2778922
ed_sx2s	.1431907	.8722379	0.16	0.870	-1.566581	1.852962
ed_sx4s	.6357635	.7225509	0.88	0.379	-.7805895	2.052116
ed_sx5s	-.3108092	.8863183	-0.35	0.726	-2.048181	1.426563
ed_sx6s	-.556191	1.185252	-0.47	0.639	-2.879536	1.767154
_cons	.5548636	.5417574	1.02	0.306	-.5070957	1.616823

.25 Quantile regression — Number of obs = 9595
Raw sum of deviations 120281.7 (about 4.8221998)
Min sum of deviations 112097.8 — Pseudo R2 = 0.0680

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-1.048617	.2210771	-4.74	0.000	-1.481975	-.6152588
age_1m	-1.927666	.6481078	-2.97	0.003	-3.198095	-.6572375
age_2m	-1.47195	.3525029	-4.18	0.000	-2.16293	-.7809694
age_4m	1.879767	.3455796	5.44	0.000	1.202358	2.557176
age_5m	4.1217	.4769762	8.64	0.000	3.186726	5.056675
age_6m	2.788368	.6247783	4.46	0.000	1.56367	4.013065
age_1s	-3.418184	.5926631	-5.77	0.000	-4.579929	-2.256438
age_2s	-2.226684	.3428949	-6.49	0.000	-2.89883	-1.554537
age_4s	2.001933	.3486973	5.74	0.000	1.318412	2.685454
age_5s	5.462499	.4781905	11.42	0.000	4.525145	6.399854
age_6s	7.147966	.6343621	11.27	0.000	5.904482	8.39145
fmsz27	.4483333	.0821686	5.46	0.000	.2872655	.6094012
femal_m	-.410017	.6878268	-0.60	0.551	-1.758304	.9382694
ed0_8m	-2.4399	.4195221	-5.82	0.000	-3.262252	-1.617548
ed9_13m	-.9219332	.3620493	-2.55	0.011	-1.631627	-.2122397
ed_psm	.6723666	.3089044	2.18	0.030	.0668484	1.277885
ed_um	2.6896	.4008467	6.71	0.000	1.903856	3.475345
ed_abum	5.185466	.4654031	11.14	0.000	4.273178	6.097755
ed0_8s	-4.329667	.810874	-5.34	0.000	-5.919152	-2.740182
ed9_13s	-1.681	.6849585	-2.45	0.014	-3.023664	-.3383362
ed_pss	-.41665	.5760625	-0.72	0.470	-1.545855	.7125548
ed_us	-1.366017	.705526	-1.94	0.053	-2.748997	.0169637
ed_abus	-1.66295	.9376445	-1.77	0.076	-3.500932	.1750325
ed_sx1m	-.0870324	1.012238	-0.09	0.931	-2.071235	1.89717
ed_sx2m	-.7906829	.8024753	-0.99	0.324	-2.363705	.7823388
ed_sx4m	-.067316	.6405674	-0.11	0.916	-1.322964	1.188332
ed_sx5m	-.7091831	.7720279	-0.92	0.358	-2.222521	.8041553
ed_sx6m	-1.711782	.9732564	-1.76	0.079	-3.619571	.1960065
ed_sx1s	-1.456733	.9111562	-1.60	0.110	-3.242793	.3293262
ed_sx2s	-.6906666	.7569896	-0.91	0.362	-2.174527	.7931935
ed_sx4s	.2829501	.6366661	0.44	0.657	-.9650504	1.530951
ed_sx5s	2.565084	.7951441	3.23	0.001	1.006432	4.123735
ed_sx6s	1.7729	1.142767	1.55	0.121	-.4671654	4.012965
_cons	4.1933	.4790205	8.75	0.000	3.254318	5.132282

Median regression — Number of obs = 9595

Raw sum of deviations 206408 (about 13.3461)

Min sum of deviations 185212.6 — Pseudo R2 = 0.1027

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	.2391866	.5314421	0.45	0.653	-.8025526	1.280926
age_1m	-2.881534	1.489722	-1.93	0.053	-5.801704	.0386371
age_2m	-2.120813	.822771	-2.58	0.010	-3.733619	-.5080079
age_4m	4.304106	.7599977	5.66	0.000	2.814349	5.793862
age_5m	6.271628	1.095574	5.72	0.000	4.124071	8.419186
age_6m	5.59934	1.442774	3.88	0.000	2.771197	8.427484
age_1s	-5.632726	1.324296	-4.25	0.000	-8.228626	-3.036826
age_2s	-3.890093	.7981176	-4.87	0.000	-5.454573	-2.325614
age_4s	5.063146	.7789306	6.50	0.000	3.536277	6.590015
age_5s	9.867559	1.135568	8.69	0.000	7.641605	12.09351
age_6s	9.86817	1.47697	6.68	0.000	6.972996	12.76334
fmsz27	.6608134	.1986362	3.33	0.001	.2714444	1.050182
femal_m	-.4528921	1.563615	-0.29	0.772	-3.517909	2.612125
ed0_8m	-3.009446	1.021519	-2.95	0.003	-5.011839	-1.007053
ed9_13m	-1.147099	.8493131	-1.35	0.177	-2.811932	.5177352
ed_psm	1.408534	.7399232	1.90	0.057	-.0418728	2.85894
ed_um	6.238534	.943697	6.61	0.000	4.388688	8.08838
ed_abum	11.17899	1.099768	10.16	0.000	9.023217	13.33477
ed0_8s	-4.344885	1.986294	-2.19	0.029	-8.238443	-.4513266
ed9_13s	-1.828574	1.605043	-1.14	0.255	-4.974798	1.31765
ed_pss	-.3969465	1.361647	-0.29	0.771	-3.066063	2.27217
ed_us	.204173	1.669748	0.12	0.903	-3.068888	3.477234
ed_abus	.323267	2.257363	0.14	0.886	-4.101644	4.748178
ed_sx1m	-3.295251	2.52669	-1.30	0.192	-8.248099	1.657597
ed_sx2m	-1.203809	1.957527	-0.61	0.539	-5.040978	2.63336
ed_sx4m	-.7910679	1.533532	-0.52	0.606	-3.797117	2.214981
ed_sx5m	-3.510381	1.837925	-1.91	0.056	-7.113104	.0923421
ed_sx6m	.746631	2.498712	0.30	0.765	-4.151375	5.644637
ed_sx1s	-2.425553	2.213673	-1.10	0.273	-6.764822	1.913716
ed_sx2s	-2.3567	1.791566	-1.32	0.188	-5.868549	1.155149
ed_sx4s	-.0827007	1.491571	-0.06	0.956	-3.006497	2.841096
ed_sx5s	1.886548	1.868194	1.01	0.313	-1.775508	5.548603
ed_sx6s	3.523739	2.689222	1.31	0.190	-1.747706	8.795184
_cons	8.750746	1.127357	7.76	0.000	6.540886	10.96061

.75 Quantile regression — Number of obs = 9595
Raw sum of deviations 238098.9 (about 28.941)
Min sum of deviations 208452.4 — Pseudo R2 = 0.1245

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	1.345572	.7796901	1.73	0.084	-.182786	2.87393
age_1m	-5.065064	2.256685	-2.24	0.025	-9.488646	-.6414823
age_2m	-4.843715	1.204525	-4.02	0.000	-7.204839	-2.482591
age_4m	6.962841	1.060237	6.57	0.000	4.88455	9.041131
age_5m	14.11863	1.563906	9.03	0.000	11.05304	17.18422
age_6m	9.488796	2.229681	4.26	0.000	5.11815	13.85944
age_1s	-8.496237	1.921012	-4.42	0.000	-12.26183	-4.730646
age_2s	-6.271829	1.176279	-5.33	0.000	-8.577586	-3.966072
age_4s	9.076319	1.09125	8.32	0.000	6.937239	11.2154
age_5s	11.63984	1.629121	7.14	0.000	8.446412	14.83326
age_6s	12.54426	2.290435	5.48	0.000	8.054525	17.034
fmsz27	1.382159	.2779591	4.97	0.000	.8372998	1.927017
femal_m	-1.425987	2.174213	-0.66	0.512	-5.687905	2.835931
ed0_8m	-5.098573	1.5222	-3.35	0.001	-8.082409	-2.114738
ed9_13m	-2.235245	1.238172	-1.81	0.071	-4.662325	.1918345
ed_psm	.4462846	1.076953	0.41	0.679	-1.664772	2.557341
ed_um	9.301577	1.404003	6.63	0.000	6.549432	12.05372
ed_abum	25.34648	1.578104	16.06	0.000	22.25307	28.4399
ed0_8s	-3.519796	2.892381	-1.22	0.224	-9.189476	2.149885
ed9_13s	-1.619305	2.24735	-0.72	0.471	-6.024587	2.785978
ed_pss	-1.732237	1.985295	-0.87	0.383	-5.623835	2.159362
ed_us	1.768469	2.428436	0.73	0.466	-2.991781	6.528718
ed_abus	7.766419	2.975005	2.61	0.009	1.934778	13.59806
ed_sx1m	-11.53296	3.566675	-3.23	0.001	-18.5244	-4.541521
ed_sx2m	-2.064196	2.817678	-0.73	0.464	-7.587442	3.45905
ed_sx4m	.6344079	2.234519	0.28	0.776	-3.745722	5.014538
ed_sx5m	-7.009235	2.674768	-2.62	0.009	-12.25235	-1.766122
ed_sx6m	-12.90788	3.551634	-3.63	0.000	-19.86984	-5.945927
ed_sx1s	-6.756518	3.229367	-2.09	0.036	-13.08676	-.4262733
ed_sx2s	-4.897579	2.528013	-1.94	0.053	-9.853021	.0578621
ed_sx4s	.5991257	2.19149	0.27	0.785	-3.696659	4.89491
ed_sx5s	4.905931	2.731083	1.80	0.072	-.447571	10.25943
ed_sx6s	5.239484	3.660747	1.43	0.152	-1.936356	12.41532
_cons	17.42251	1.586679	10.98	0.000	14.31228	20.53274

.9 Quantile regression — Number of obs = 9595
Raw sum of deviations 200718.2 (about 55.599998)
Min sum of deviations 173455.9 — Pseudo R2 = 0.1358

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.3683978	1.68768	-0.22	0.827	-3.676608	2.939813
age_1m	-7.746803	4.970098	-1.56	0.119	-17.48925	1.995642
age_2m	-9.132994	2.484933	-3.68	0.000	-14.00399	-4.261998
age_4m	9.615798	2.099166	4.58	0.000	5.500987	13.73061
age_5m	34.60221	3.251929	10.64	0.000	28.22774	40.97668
age_6m	27.1281	4.296113	6.31	0.000	18.70681	35.54939
age_1s	-12.4855	3.939435	-3.17	0.002	-20.20762	-4.763367
age_2s	-9.239504	2.417842	-3.82	0.000	-13.97899	-4.500021
age_4s	16.86719	2.158997	7.81	0.000	12.6351	21.09929
age_5s	9.930202	3.303318	3.01	0.003	3.454998	16.40541
age_6s	5.184414	4.435765	1.17	0.243	-3.510626	13.87945
fmsz27	2.932505	.5846673	5.02	0.000	1.786433	4.078577
femal_m	-3.884625	4.288986	-0.91	0.365	-12.29195	4.522697
ed0_8m	-11.0045	3.235849	-3.40	0.001	-17.34745	-4.661546
ed9_13m	-5.832194	2.552641	-2.28	0.022	-10.83591	-.8284761
ed_psm	-2.137509	2.268009	-0.94	0.346	-6.583287	2.30827
ed_um	17.91299	3.004863	5.96	0.000	12.02282	23.80316
ed_abum	38.13041	3.272838	11.65	0.000	31.71495	44.54586
ed0_8s	3.961321	5.723303	0.69	0.489	-7.257566	15.18021
ed9_13s	3.504611	4.488261	0.78	0.435	-5.293333	12.30255
ed_pss	1.361777	4.156263	0.33	0.743	-6.785379	9.508933
ed_us	6.380887	5.005174	1.27	0.202	-3.430315	16.19209
ed_abus	15.68609	6.596424	2.38	0.017	2.755696	28.61647
ed_sx1m	-14.67498	7.153151	-2.05	0.040	-28.69667	-.6532884
ed_sx2m	-7.537489	5.6014	-1.35	0.178	-18.51742	3.442443
ed_sx4m	1.378445	4.492383	0.31	0.759	-7.427579	10.18447
ed_sx5m	-11.40987	5.298609	-2.15	0.031	-21.79627	-1.023473
ed_sx6m	1.830929	7.76012	0.24	0.813	-13.38055	17.04241
ed_sx1s	-16.27923	6.431123	-2.53	0.011	-28.88559	-3.672865
ed_sx2s	-12.31461	5.058619	-2.43	0.015	-22.23058	-2.398648
ed_sx4s	-1.639275	4.598618	-0.36	0.721	-10.65354	7.374991
ed_sx5s	5.493613	5.629813	0.98	0.329	-5.542015	16.52924
ed_sx6s	21.30861	8.102683	2.63	0.009	5.425629	37.19158
_cons	29.53499	3.434569	8.60	0.000	22.8025	36.26747

Model 3: Single families

OLS regression

Source	SS	df	MS		Number of obs =	6206
Model	386473.828	18	21470.7682		F(18, 6187) =	28.13
Residual	4722399.26	6187	763.277721		Prob > F =	0.0000
					R-squared =	0.0756
Total	5108873.09	6205	823.347798		Adj R-squared =	0.0730
					Root MSE =	27.627

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	1.241774	.9627768	1.29	0.197	-.6456027	3.129151
age_1m	-4.696066	1.252074	-3.75	0.000	-7.150566	-2.241566
age_2m	-1.734072	1.107456	-1.57	0.117	-3.905072	.4369268
age_4m	5.739514	1.235539	4.65	0.000	3.317427	8.1616
age_5m	11.39586	1.453811	7.84	0.000	8.545887	14.24584
age_6m	13.81462	1.245591	11.09	0.000	11.37283	16.25641
lone_p	.4143839	1.208417	0.34	0.732	-1.954534	2.783302
femal_m	-1.649115	1.938463	-0.85	0.395	-5.449176	2.150946
ed0_8m	-7.115401	2.189638	-3.25	0.001	-11.40785	-2.82295
ed9_13m	-2.854334	1.869095	-1.53	0.127	-6.518409	.8097411
ed_psm	.5190615	1.594598	0.33	0.745	-2.606904	3.645027
ed_um	3.955156	1.90972	2.07	0.038	.211441	7.698871
ed_abum	23.22687	2.589299	8.97	0.000	18.15095	28.3028
ed_sx1m	-3.611768	2.814161	-1.28	0.199	-9.128502	1.904965
ed_sx2m	-1.779847	2.563184	-0.69	0.487	-6.804579	3.244885
ed_sx4m	-1.227717	2.227144	-0.55	0.581	-5.593694	3.13826
ed_sx5m	2.272931	2.678421	0.85	0.396	-2.977705	7.523567
ed_sx6m	-9.379294	3.718524	-2.52	0.012	-16.66889	-2.089695
_cons	8.315637	1.519489	5.47	0.000	5.33691	11.29436

.1 Quantile regression — Number of obs = 6206

Raw sum of deviations 15018.38 (about -.015)

Min sum of deviations 14841.38 — Pseudo R2 = 0.0118

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.19035	.0421632	-4.51	0.000	-.2730046	-.1076954
age_1m	-.9099	.0633416	-14.36	0.000	-1.034072	-.7857284
age_2m	-.29285	.0481171	-6.09	0.000	-.3871763	-.1985237
age_4m	.0801	.0499086	1.60	0.109	-.0177382	.1779382
age_5m	.1818	.0574463	3.16	0.002	.0691854	.2944146
age_6m	.3556	.0521732	6.82	0.000	.2533224	.4578775
lone_p	.0137	.045854	0.30	0.765	-.0761897	.1035897
femal_m	.2062	.0761251	2.71	0.007	.0569683	.3554317
ed0_8m	-.2053	.0964094	-2.13	0.033	-.3942959	-.016304
ed9_13m	-.1233	.0751612	-1.64	0.101	-.270642	.024042
ed_psm	-.185	.0708969	-2.61	0.009	-.3239826	-.0460174
ed_um	-.12535	.0774405	-1.62	0.106	-.2771603	.0264603
ed_abum	.50225	.0971824	5.17	0.000	.3117388	.6927613
ed_sx1m	-.1369	.1143616	-1.20	0.231	-.3610885	.0872885
ed_sx2m	-.2366	.1021333	-2.32	0.021	-.4368168	-.0363832
ed_sx4m	-.0695	.0934076	-0.74	0.457	-.2526113	.1136113
ed_sx5m	.2363	.1072333	2.20	0.028	.0260855	.4465145
ed_sx6m	-.6101	.1389367	-4.39	0.000	-.8824642	-.3377358
_cons	.0682	.0632443	1.08	0.281	-.0557807	.1921807

.25 Quantile regression — Number of obs = 6206
Raw sum of deviations 35619.36 (about .24420001)
Min sum of deviations 35024.89 — Pseudo R2 = 0.0167

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.4281667	.0811104	-5.28	0.000	-.5871711	-.2691622
age_1m	-.5168333	.1193128	-4.33	0.000	-.7507278	-.2829388
age_2m	-.1618334	.0967264	-1.67	0.094	-.3514507	.027784
age_4m	.3351	.1009783	3.32	0.001	.1371474	.5330527
age_5m	.6181667	.1145654	5.40	0.000	.3935788	.8427547
age_6m	1.608167	.0985345	16.32	0.000	1.415005	1.801328
lone_p	.0031667	.0910515	0.03	0.972	-.1753259	.1816593
femal_m	.1167334	.1511818	0.77	0.440	-.1796355	.4131022
ed0_8m	-.8534	.1705971	-5.00	0.000	-1.187829	-.5189705
ed9_13m	-.4332666	.1517149	-2.86	0.004	-.7306805	-.1358526
ed_psm	-.2050999	.1328095	-1.54	0.123	-.4654527	.0552528
ed_um	.0467334	.1782988	0.26	0.793	-.3027942	.396261
ed_abum	2.046733	.1985859	10.31	0.000	1.657436	2.436031
ed_sx1m	-.1184334	.2133187	-0.56	0.579	-.5366122	.2997454
ed_sx2m	-.0995001	.2010395	-0.49	0.621	-.4936073	.2946071
ed_sx4m	-.0049001	.1795989	-0.03	0.978	-.3569763	.3471762
ed_sx5m	.5155667	.2353318	2.19	0.029	.0542346	.9768988
ed_sx6m	-.7817334	.2805659	-2.79	0.005	-1.33174	-.2317268
_cons	.5751	.1253678	4.59	0.000	.3293355	.8208644

Median regression — Number of obs = 6206
Raw sum of deviations 66718.79 (about 2.75)
Min sum of deviations 62166.46 — Pseudo R2 = 0.0682

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	-.5059999	.1532742	-3.30	0.001	-.8064706	-.2055293
age_1m	-3.055	.2305001	-13.25	0.000	-3.50686	-2.60314
age_2m	-2.13	.1860982	-11.45	0.000	-2.494817	-1.765183
age_4m	1.695	.192285	8.82	0.000	1.318054	2.071945
age_5m	3.845	.217207	17.70	0.000	3.419199	4.270801
age_6m	7.634	.1926481	39.63	0.000	7.256343	8.011657
lone_p	.3121999	.1764906	1.77	0.077	-.0337831	.6581829
femal_m	.0938002	.3020295	0.31	0.756	-.4982825	.6858829
ed0_8m	-3.6885	.3403379	-10.84	0.000	-4.355681	-3.021319
ed9_13m	-.655	.3113385	-2.10	0.035	-1.265332	-.0446682
ed_psm	.0200001	.2700963	0.07	0.941	-.5094824	.5494826
ed_um	1.9725	.3374776	5.84	0.000	1.310927	2.634073
ed_abum	6.855199	.3989561	17.18	0.000	6.073106	7.637292
ed_sx1m	-1.143301	.4231655	-2.70	0.007	-1.972852	-.3137493
ed_sx2m	-.8738002	.4061492	-2.15	0.031	-1.669994	-.0776066
ed_sx4m	-.6678003	.3564641	-1.87	0.061	-1.366594	.0309932
ed_sx5m	-.5463003	.4481023	-1.22	0.223	-1.424736	.3321358
ed_sx6m	-4.567199	.5617786	-8.13	0.000	-5.66848	-3.465918
_cons	3.71	.2500645	14.84	0.000	3.219787	4.200213

.75 Quantile regression — Number of obs = 6206
Raw sum of deviations 81248.92 (about 12.1445)
Min sum of deviations 71648.52 — Pseudo R2 = 0.1182

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	2.550001	.2691401	9.47	0.000	2.022393	3.077609
age_1m	-7.665498	.3978997	-19.26	0.000	-8.44552	-6.885477
age_2m	-5.450498	.3312576	-16.45	0.000	-6.099878	-4.801119
age_4m	4.618799	.3606453	12.81	0.000	3.911809	5.325789
age_5m	11.3095	.3945493	28.66	0.000	10.53605	12.08296
age_6m	13.1587	.3714826	35.42	0.000	12.43046	13.88693
lone_p	.0249998	.3249658	0.08	0.939	-.6120461	.6620457
femal_m	.7601013	.5457036	1.39	0.164	-.3096674	1.82987
ed0_8m	-5.471199	.60885	-8.99	0.000	-6.664756	-4.277642
ed9_13m	-2.2927	.5463236	-4.20	0.000	-3.363684	-1.221716
ed_psm	.9942997	.4704082	2.11	0.035	.0721363	1.916463
ed_um	4.8193	.5812571	8.29	0.000	3.679834	5.958765
ed_abum	17.7101	.7246001	24.44	0.000	16.28963	19.13057
ed_sx1m	-3.9887	.7758824	-5.14	0.000	-5.509699	-2.467701
ed_sx2m	-.9081015	.7364942	-1.23	0.218	-2.351886	.5356829
ed_sx4m	-3.400101	.6347959	-5.36	0.000	-4.644522	-2.155681
ed_sx5m	-.3901023	.7920087	-0.49	0.622	-1.942715	1.16251
ed_sx6m	-11.21	1.034088	-10.84	0.000	-13.23717	-9.182831
_cons	10.1312	.4424659	22.90	0.000	9.263812	10.99859

.9 Quantile regression — Number of obs = 6206
Raw sum of deviations 66923.46 (about 28.0287)
Min sum of deviations 58785.28 — Pseudo R2 = 0.1216

wealth	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
imigrnt	5.021503	.7592353	6.61	0.000	3.533137	6.509868
age_1m	-11.845	1.014508	-11.68	0.000	-13.83379	-9.856212
age_2m	-6.795002	.8930657	-7.61	0.000	-8.545722	-5.044283
age_4m	6.8845	1.022141	6.74	0.000	4.880749	8.888251
age_5m	23.705	1.095374	21.64	0.000	21.55769	25.85231
age_6m	21.24	1.067323	19.90	0.000	19.14768	23.33232
lone_p	-.0955	.8917334	-0.11	0.915	-1.843607	1.652607
femal_m	-1.255004	1.667609	-0.75	0.452	-4.524097	2.01409
ed0_8m	-12.765	1.768964	-7.22	0.000	-16.23279	-9.297218
ed9_13m	-9.129502	1.532161	-5.96	0.000	-12.13307	-6.125935
ed_psm	-2.03	1.35076	-1.50	0.133	-4.677958	.6179577
ed_um	11.87	1.718796	6.91	0.000	8.500562	15.23944
ed_abum	19.525	2.082712	9.37	0.000	15.44216	23.60784
ed_sx1m	-4.744997	2.232101	-2.13	0.034	-9.12069	-.3693035
ed_sx2m	-2.720497	2.055796	-1.32	0.186	-6.75057	1.309577
ed_sx4m	-5.504999	1.864994	-2.95	0.003	-9.161035	-1.848962
ed_sx5m	-1.849495	2.309112	-0.80	0.423	-6.376157	2.677167
ed_sx6m	-5.408796	2.939209	-1.84	0.066	-11.17067	.3530753
_cons	25.225	1.302765	19.36	0.000	22.67113	27.77888

Table A4. Definitions of variables in the regression results

imigrnt: 1 if major income recipient (MIR) is an immigrant, 0 otherwise.
age_1m: 1 if MIR is aged under 26.
age_2m: 1 if MIR is aged between 26 and 35.
age_3m: 1 if MIR is aged between 36 and 45 (reference group).
age_4m: 1 if MIR is aged between 46 and 55.
age_5m: 1 if MIR is aged between 56 and 65.
age_6m: 1 if MIR is above 65 years old.
age_1s -- age_6s: age dummies for spouse, same as those for the MIR above.
fmsz27: family size (married families).
lone_p: 1 if MIR is a lone parent, 0 otherwise (for single families).
femal_m: 1 if MIR is female, 0 if male.
femal_s: 1 if spouse is female, 0 if male.
ed0_8m: 1 if MIR's years of schooling is between 0 and 8.
ed9_13m: 1 if MIR's years of schooling is between 9 and 13.
ed_hsm: 1 if MIR is a high school graduate (reference group).
ed_psm: 1 if MIR has some post-secondary education.
ed_um: 1 if MIR is a university graduate with a degree.
ed_abum: 1 if MIR's education is above university level.
ed0_8s: This and the following 5 variables are education dummies for spouse. They are
ed9_13s: defined in the same way as for MIR above.
ed_hss:
ed_pss:
ed_us:
ed_abus:
ed_sx1m: femal_m*ed0_8m, interaction between sex and education for MIR.
ed_sx2m: femal_m*ed9_13m.
ed_sx3m: femal_m*ed_hsm (reference group).
ed_sx4m: femal_m*ed_psm.
ed_sx5m: femal_m*ed_um .
ed_sx6m: femal_m*ed_abum
ed_sx1s: This and the following are interactions between sex and education for spouse.
ed_sx2s: They are defined in the same way as for MIR above.
ed_sx3s:
ed_sx4s:
ed_sx5s:
ed_sx6s:

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